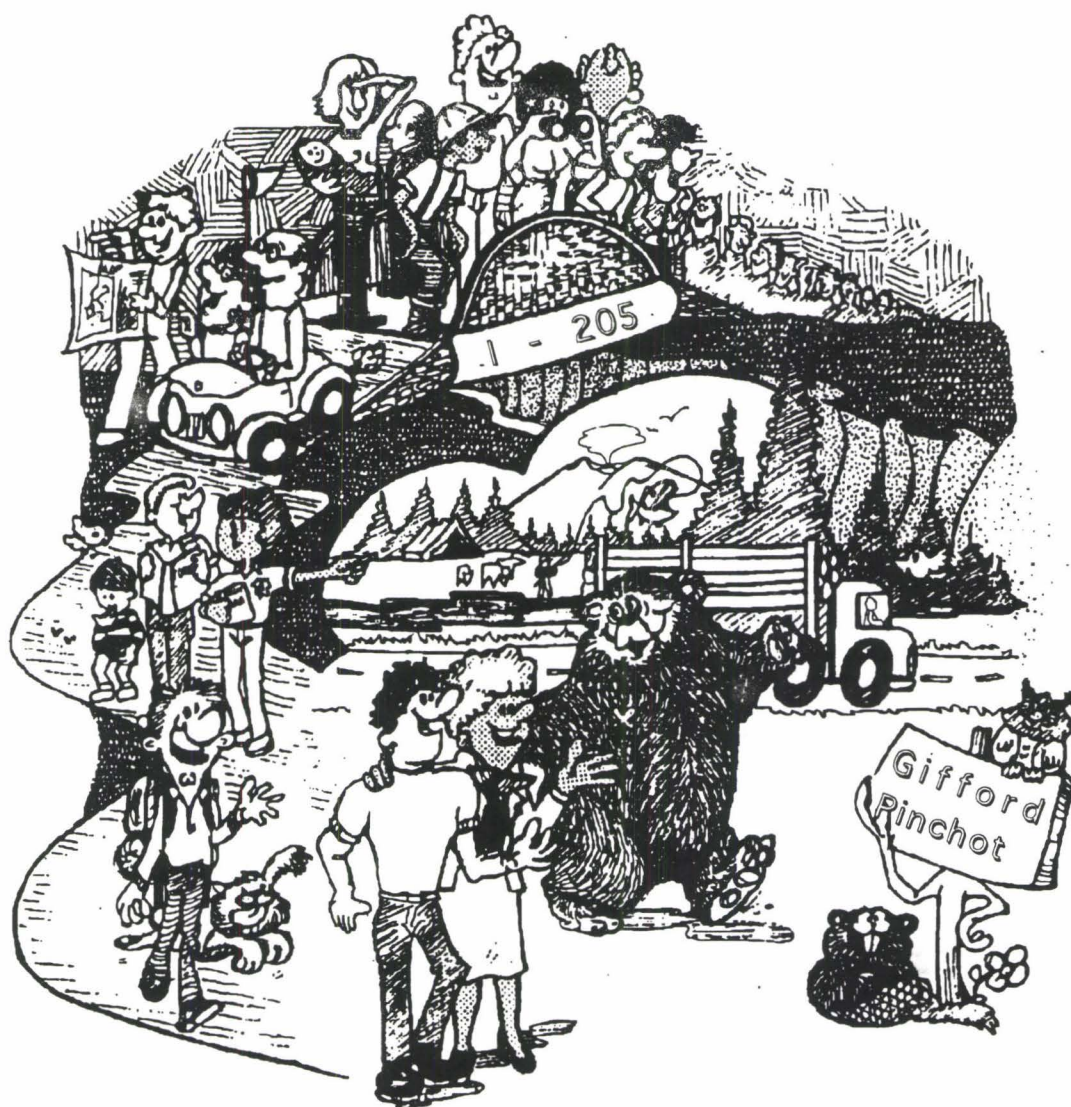


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Recreation Demand and Trend Analysis for the Gifford Pinchot National Forest



RECREATION DEMAND AND TREND ANALYSIS
FOR THE
GIFFORD PINCHOT NATIONAL FOREST

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TITLE: RECREATION DEMAND AND TREND ANALYSIS
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ABSTRACT:

Shifts in patterns of recreation use are resulting in new challenges for managers of the Gifford Pinchot National Forest. Critical to the understanding of the impacts of such shifts is an adequate understanding of visitor needs. Visitor preferences and characteristics and demand trends are compared and contrasted based on information from recent studies. Also considered are user preferences for activities and estimated activity growth through the year 2000. Activity setting preferences and 'settings used' are compared using the Recreation Opportunity Spectrum. The potential effects of economic, environmental, political, sociological and technological trends relative to the Forest are discussed, and the resulting recreation needs are identified. Developing effective management strategies based on identified need, with effective public involvement, will result in more user satisfaction and support for visitor management programs.

KEYWORDS: Recreation Demand, Trends, Gifford Pinchot National Forest, Preferences

EXECUTIVE SUMMARY

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Forest demand and trend information was obtained from a variety of empirical and primary sources, including recent surveys, published research, and interviews with knowledgeable personnel. It was then compared and/or contrasted and graphically displayed. Trends and their potential effect on recreation demand were analyzed. As a result of the demand and trend analysis, recreation needs and topics were identified for further study.

Trip Profiles and User Characteristics

SUMMARY:

The focus of this study provides an understanding of outdoor recreation trends affecting demand for the Gifford Pinchot National Forest through the year 2000. The management of the Forest is being significantly affected by rapid environmental, social, technological, and economic changes. A principle issue for Forest managers is "Where and what type of outdoor recreation opportunities should be provided on National Forest lands in the future?" A key to the resolution of this issue is a better understanding of how visitor needs are changing. Anticipating rather than simply reacting to these changing needs requires accurate and timely demand information for recreation managers and decision makers.

Trip profile analysis provided the following information:

- Approximately two-thirds of the Vancouver and rural southwest Washington residents visit the Forest several times each year, compared with one-third of Portland area residents. Most visitors travel to the Forest by personal vehicle and are within a 6-hour drive of their residence. Nearly 90 percent of Forest visitors live in Washington or Oregon.
 - Campground Users: About 70 percent return to the same site or area. The average length of stay is 2.6 nights, with 65 percent staying 1 to 2 nights. The average group size is 3.3 persons, with approximately 45 percent having 2 persons per group.
-

- Dispersed users (those in undeveloped facilities): Approximately 85 percent of the campers return to their same favorite areas, while 74 percent of the day users return to the same areas. The average length of stay is 3.1 nights, except during the hunting season, when the average is 7.8 nights. Approximately half of the Wilderness users are first-time visitors
- Demographic analysis yielded the following results: About 60 percent of Forest visitors are male, and nearly 95 percent are Caucasian. The predominant user age group, approximately 57 percent, is from 30 to 50 years, followed by the over-50 age group having 29 percent. Users of the Forest are well educated, with 93 percent having at least a high school education or more, including 49 percent with some college and 19 percent with bachelor's degrees. Nearly 56 percent are employed, and 29 percent are retirees. Seventy-eight percent have household incomes of more than \$25,000 per year.

Activity and Setting Demand

The most popular recreation activities for the Forest in order of participation are: sight-seeing and picnicking, followed by camping, hiking, nature study, hunting, fishing and winter sports activities. Rate of increased demand from 1990 to 2000 is expected to exceed the Washington State population increase of 18 percent for all activities except hunting. Forecasted increases in activity demand are highest for nature study, hiking, mountain biking, photography, 4WD riding, and visiting interpretive centers.

Outdoor recreation settings are defined by the Recreation Opportunity Spectrum, which provides a spectrum of opportunity classes from Primitive through Rural and Urban. Settings used and preferred were compared for each activity. Most users preferred to use a more natural or semiprimitive setting than the one they were currently allowed to use for the following activities: fishing, nature study, hiking, camping, non-motorized riding, and hunting.

Trend Effects

During the next decade the Forest can expect increased use primarily by middle-aged and older users with advanced education and higher disposable incomes, who will be pursuing a greater variety of activities. They will be seeking quality opportunities that can be accessed in less time: hence, closer to their residence. More and better quality information will be demanded by users, especially to meet the needs of a culturally and ethnically more diverse clientele.

Meeting customer needs will require managers to use 21st century market-driven, customer satisfaction strategies. Implementing these strategies will require the consent of interested publics. Public consent (acceptance and support) can be increased by sharing power and involving the public in the decision-making process.

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INTRODUCTION

STATEMENT OF PURPOSE

Nationally, over the past several decades, there has been a phenomenal increase in outdoor recreation visitation to public recreation areas as more emphasis is placed on leisure time pursuits. Outdoor recreation plays a significant role in the quality of modern American life (Clawson, 1985). Nowhere is this demonstrated more than in the Pacific Northwest, where active outdoor recreationists demand a variety of recreation opportunities.

As a result, current recreation demand projections for the Gifford Pinchot National Forest (Forest) are becoming increasingly important for Forest planners and managers. Available recreation resources must be allocated and managed more efficiently while developing recreation policies responsive to socioeconomic needs.

Recreation demand projections in the Forest planning and project planning processes allow for a greater understanding of the relationships inherent in recreation behavior and allow for broader consideration of all forms of demand. This information can be useful as a basis for determining changes in the distribution and type of recreation facilities to be provided, in order to respond to changing visitor needs and use patterns.

In an effort to provide sound demand predictions for managers, national outdoor recreation research has focused on trends

related to motivational factors and benefits. Locally and regionally, there has been considerable research concerning user preferences. Washington State resource management agencies have made predictions about recreation use within the state. However, much of this information is difficult for local managers to apply without interpretation. The implications for recreation management are important as decisions affecting Forest uses and resources are made.

The principal objective of this study is to provide the latest recreation demand information for the next decade for the Gifford Pinchot National Forest as a basis for present and future recreation management decisions. In order to understand and predict future visitor needs, demand is considered by activity and by the Recreation Opportunity Spectrum setting (ROS) used by the US Forest Service to help recreation managers in providing recreation opportunities (USDA, 1986). The demand information used to develop the recreation component of the Forest Plan, issued in 1990, is in need of revision. Recent surveys of recreation user characteristics and preferences provide more current and specific information about Forest recreationists and the relationship between activities and settings. As a basis for understanding future visitor needs, visitor socioeconomic characteristics and styles of participation are analyzed.

This study also includes a discussion of the recreation setting demand by ROS class and activity. It addresses semiprimitive recreation, identified as an issue during the development of the Gifford Pinchot National Forest Land and Resource Management Plan and Final Environmental Impact Statement (FEIS), published in 1990 (USDA, 1990). Semiprimitive recreation continues to be an important issue for project and area planning.

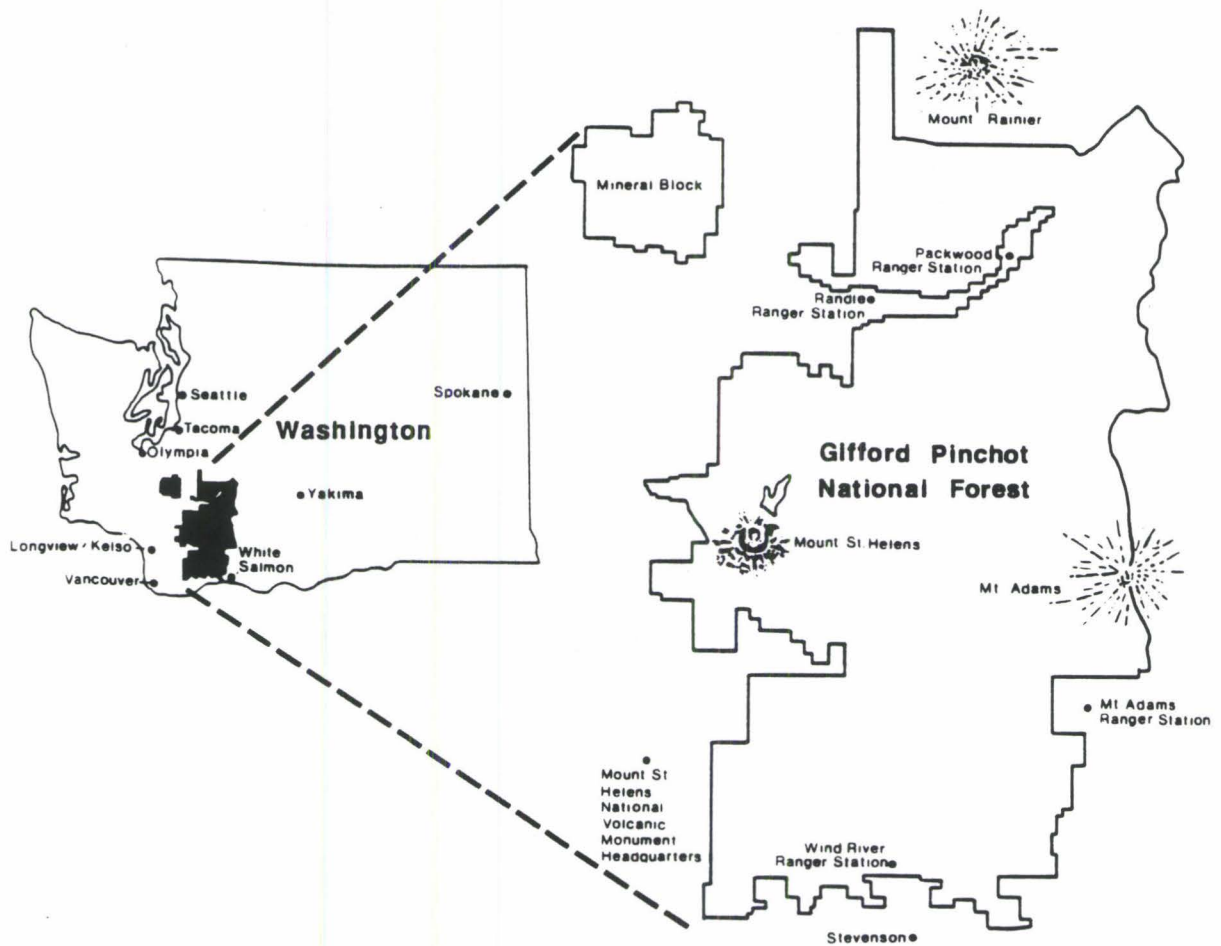
A secondary objective of this study is to identify relevant trends and suggest how they might affect present and future recreation demand and management. This has resulted from Forest recreation managers' questions about the increasing need to be aware of and understand economic, environmental, political, sociological, and technological trends and how they affect recreation. Consequently, trends provide a basis for qualitative assessments critical to developing effective response options, and function as early indicators of the need to reevaluate demand forecasts. Some examples of recent trends influencing the recreation picture that would not have been envisioned as recently as 10 years ago include improved Forest access, reduced timber harvest due to spotted-owl habitat preservation, dramatic increase in population growth in the primary influence area, increased marketing of Forest recreation opportunities, significant new facilities related to Mount St. Helens, and new activities such as mountain biking, windsurfing, and paragliding.

The most recent data on demand and trends have been interpreted for use by Forest managers to meet the challenges they will face now and into the 21st century--only seven years away.

STUDY AREA

The focus of this study is the Gifford Pinchot National Forest, located in southwest Washington, in the heart of the Pacific Northwest. It stretches along the western slopes of the Cascade Mountain Range from the Columbia River on the south, to Mt. Rainier National Park on the north. The Wenatchee National Forest and the Yakima Indian Nation share a portion of the eastern boundary of the Forest. Strategic recreation access from the Portland/Vancouver metropolitan area is provided by Interstate Highways 5 and 205 on the west and US Highway 14 through the scenic Columbia River Gorge on the south. The principal access route from the Seattle/Tacoma/Olympia area is via Interstate Highway 5 and US Highway 12 on the north. The Forest contains approximately 1,370,000 acres within the Forest's administrative boundary.

VICINITY MAP



The Forest contributes significantly to the quality of life of more than three million people who live within a 2-hour drive. Outdoor recreation opportunities ranging from primitive backpacking to highly-developed campground sites are readily available. The Forest has a total of 55 campgrounds, seven picnic grounds, numerous viewpoints, trailheads, swimming and boating sites, and interpretive facilities including Mount St. Helens' Visitor Information Center. Old-growth Douglas fir forests provide aesthetic, cultural, and recreational values. Scenic features include snow-capped mountains, glaciers, lakes, streams, waterfalls, and rock outcrops. An extensive trail network of over 1200 miles, including the Pacific Crest National Scenic Trail, offers opportunities for many types of trail use. Seven Wildernesses totalling 180,600 acres provide the best opportunities for recreation in primitive and semiprimitive settings. The abundance of unique and scenic geologic features provide evidence of the volcanic origins of the Cascades. For example, Mount St. Helens, the only active volcano on the continental United States, provides a dramatic focal point from many parts of the Forest.

HISTORICAL CONTEXT

Gifford Pinchot National Forest management is in the midst of a major transition from a focus on timber production to the provision of recreation opportunities. The primary historical resource emphasis has been to produce timber for Northwest markets. Recreation use was considered incidental until it began to grow in the 1970s and 1980s as the population of the surrounding areas

increased. Then, recreation use of the Forest changed abruptly with the eruption of Mount St. Helens in 1980. Hundreds of thousands of visitors now come to view the devastated forests and other effects of the eruption. Now many of those same visitors are discovering other parts of the Forest.

Other factors are contributing to the increase in recreation use. The opening of the Glen Jackson Bridge across the Columbia River in the early 1980s provided greatly improved access for Oregonians. Also, some of our visitors, accustomed to recreating in the Mt. Hood National Forest in Oregon, came to escape the crowded recreation sites there. More recently, the creation of the Columbia River Gorge National Scenic Area (CRGNSA) has drawn additional recreationists to the southern parts of the Forest.

Increased recreation use and wildlife conservation measures have created additional pressure on a timber resource that has become increasingly scarce, due to intensive commercial timber harvest during the past two decades. The Forest is currently producing about 30 percent of the high timber production levels that it did during the mid-1980s. As Congress and the Forest Service struggle in debate over who will manage these lands and how they will be managed, a transition is occurring. The next generation will know the Gifford Pinchot National Forest not as a place that cuts the second highest volume of timber in the nation, but as a place that provides quality recreation opportunities close to home.

LITERATURE REVIEW

Literature searches of nationwide data sources uncovered an abundance of available research information concerning outdoor recreation demand and trends. A common thread quickly became evident: recreation and leisure pursuits are having a major impact upon our lives and the demand for recreation is increasing. The publications included in this section indicate a spectrum of the information available and include those most relevant to the Forest. The list is not meant to be exhaustive, and does not include all of the publications used as references. Additional reference documentation is provided at the end of this paper. This section is divided into two parts, based on the major categories of information reviewed: Recreation Demand and Trends Affecting Recreation Demand.

RECREATION DEMAND

CUSTOMER Final Report for the Columbia River Gorge National Scenic Area (USDA CUSTOMER, 1992). The *CUSTOMER Report* provided by the Southeastern Forest Experiment Station provides the results of surveys conducted with recreation visitors in 1991. The information includes current use patterns, demographic characteristics, trip profile characteristics, and visitor satisfaction. It contains valuable data for the southern portion of the Forest adjacent to the National Scenic Area, particularly relating to the types of activities preferred and characteristics of current users. It can be assumed that for many activities, the characteristics of the users would be similar to that of Forest users. Trip profile information is also relevant with the exception of windsurfing, which does not occur in the Forest (USDA, 1992).

Gifford Pinchot National Forest Land and Resource Management Plan (1990). The *Forest Plan* (USDA, 1990) includes information about recreation demand, in

general, that is not specific to activities nor Recreation Opportunity Classes. The *Forest Plan* recommends that additional studies are needed to increase our understanding of the economic and social effects. For example, "Determine the demand for, and the practical maximum capacity for use of, wilderness or recreation settings.... Evaluate recreation demand for specific activities and ROS classes" (pp. II-8).

Washington Outdoors: Assessment and Policy Plan 1990-1995 (Washington Interagency Committee for Outdoor Recreation, 1990). This document is a component of the *Statewide Comprehensive Outdoor Recreation Planning Program*. It is a strategic reference which outlines actions needed to meet Washington's priority outdoor recreation needs. Chapter 2 discusses recreation demand for the 1990s for the state, and considers the effect of demographic changes and population shifts on recreation demand. This provides the most valuable forecasts of demand. However, it does not recognize the effective increased demand from Oregon.

Campground User Profile (Bruin, 1990). This survey of users of campgrounds in the Wind River Ranger District in the Gifford Pinchot National Forest provides information about campground users and how they recreate.

Oregon Outdoor Recreation Plan 1988-1993. This document is part of a regional effort to identify recreation needs based on interstate visitors for Oregon, Washington, and Idaho. Again, the demand projections did not take into account Washington destinations.

Gifford Pinchot National Forest Social Assessment Study: Rural, Urban and Visitor Perspectives of the Siouyon Valley Drainage (Steel, List, Schindler, 1993). This report summarizes the responses of several opinion surveys, includes surveys of visitors to the Siouyon Valley and participants in the Siouyon Valley planning process, and documents recent information about social values and use patterns.

TRENDS AFFECTING RECREATION DEMAND

International, Social and Cultural Trends Likely to Affect the U.S. Forest Service in the 1990s. (Mealy, Coates, Jarratt, 1990). This document includes 10 trends and their effects. It provides a good overview and context for the direction in which the organization is heading. Several trends are appropriate and relevant to the Forest and its service area.

Parks and Recreation in the 21st Century. (Mobley and Toalson). This publication summarizes the results of a national

conference in Myrtle Beach, South Carolina, on April 15-19, 1991. The chief value is the listing of the most important issues and trends that could affect the field of parks, recreation, and leisure services in the 21st century. Many of these are directly applicable to outdoor recreation.

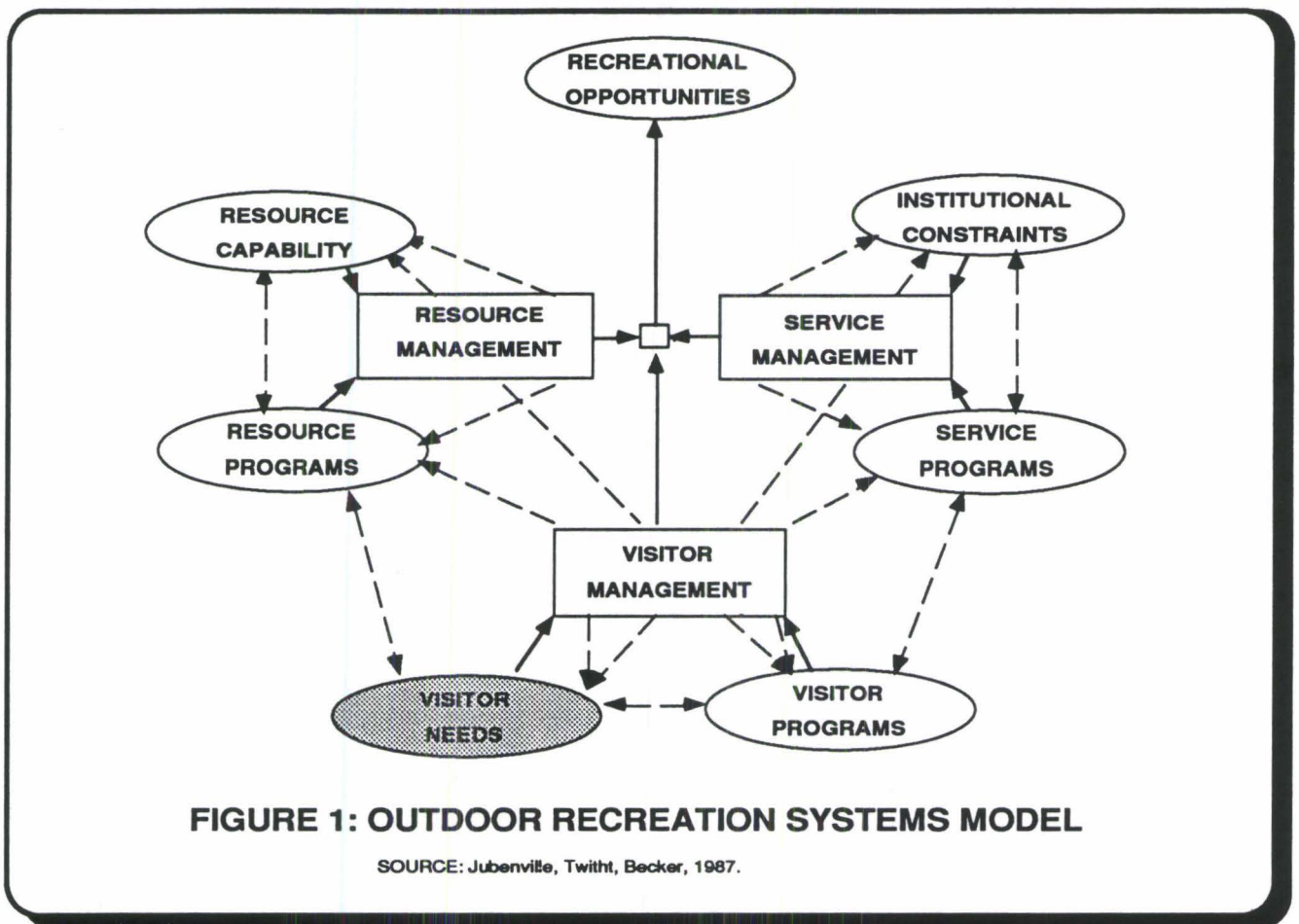
Proceedings - 1985 National Outdoor Recreation Trends Symposium II, and Proceedings - 1990 National Outdoor Recreation Trends Symposium III. These documents contain papers presented at symposiums held every five years. Much of the information on trends in recreation represents the best thinking in the field at the time. The *Proceedings* address developing trends in economics, social characteristics, policy, tourism, recreation activities, the private sector, research, and other facets of outdoor recreation.

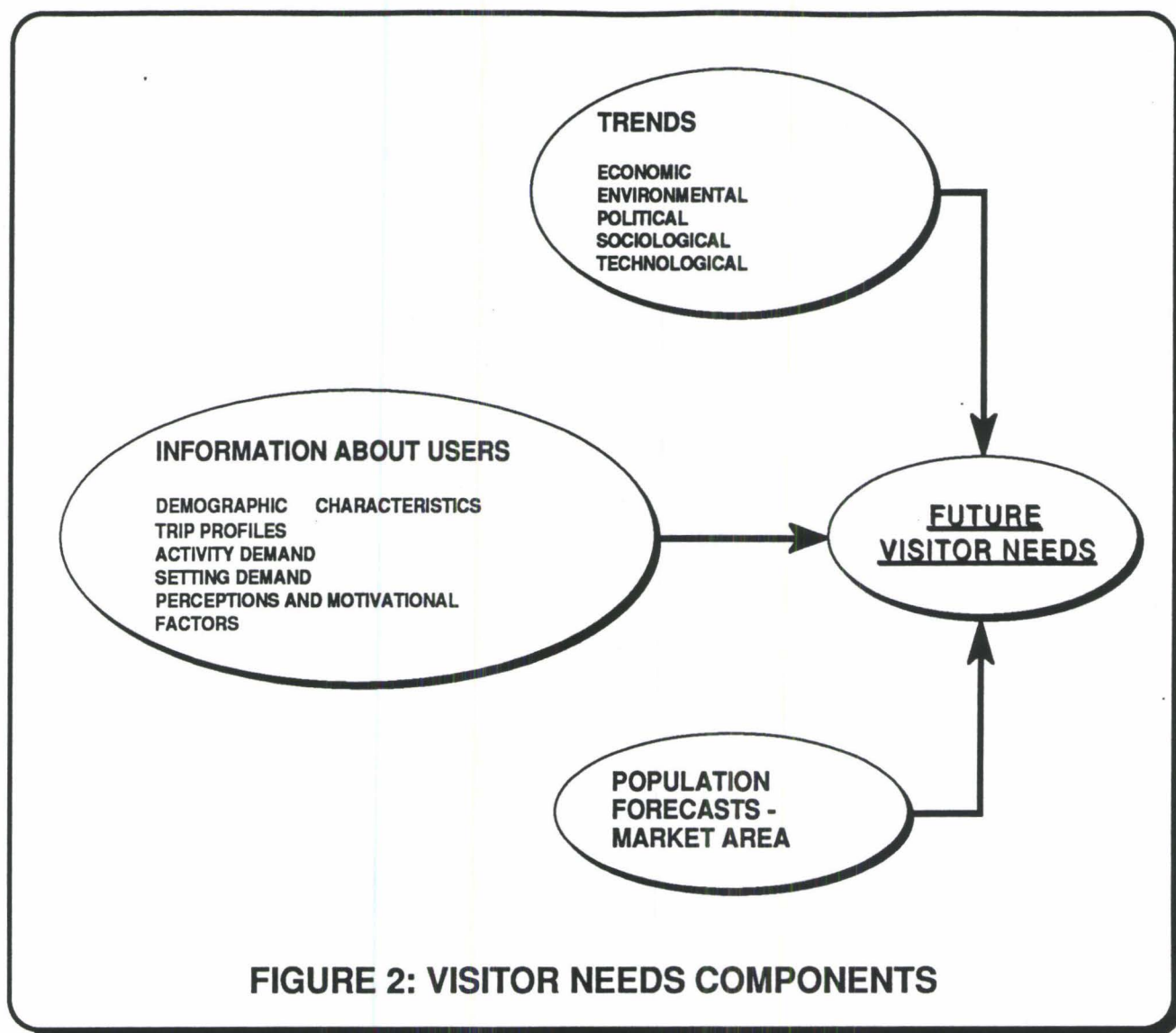
Report of National Parks for the 21st Century - The Vail Agenda (National Park Service, 1992). The Vail Agenda is the final report from the Steering Committee for the 75th Symposium of *Our National Parks: Challenges and Strategies for the 21st Century*. It presents a careful review of challenges facing national park managers, and offers specific, practical recommendations for helping achieve solutions. Its principal value for this study is in recognizing and understanding demand-related issues and responses being considered by the National Park Service. Many issues relate to the USDA Forest Service, a sister agency, which is facing similar management issues.

METHODOLOGY

THE EVALUATION APPROACH

This recreation demand study is a broad investigative effort which includes several significant areas of inquiry. The limited amount of primary data relative to the Forest mandated reliance on secondary data, obtained either through literature review or contacts with Agency staff and other knowledgeable sources. In some cases, quantitative demand data, while not specific to the Forest, is approximate, and a direct correlation can be assumed. Any assessment of demand requires consideration of qualitative as well as quantitative components. For this reason, discussion of both has been included.





Figures 1 and 2 show the relationship of key variables considered in this study. Recreation user characteristics, activity, and setting preferences are based on information from the *CUSTOMER Final Report for the Columbia River Gorge National Scenic Area*, the Washington and Oregon *Statewide Comprehensive Outdoor Recreation Program*

documents, and *Campground User Profile for Wind River Campgrounds*. Additional information about potential activity needs is derived from personal communication with Agency staff.

Information about Wilderness use and user characteristics is derived from 1992 permit

information for the seven Wildernesses in the Forest, all of which require permits for entry.

Recreation user characteristics, activity, and setting preferences from several sources are compared and contrasted in order to determine trends and patterns in participation.

Much of the data addressing national or regional trends comes from published sources. Information about local trends was gathered from conversations with recreation professionals. Trend analysis includes a survey of current research and literature that may have a direct or indirect effect on future recreation participation. Also, indirect effects tend to be those that influence recreation user characteristics to such a degree that they change activity participation rates and/or setting preferences.

An evaluation of trends and their potential effects on recreation demand is included, to provide a qualitative component to the recreation demand statistics. The trends described provide a national and regional context within which further local assessment can be made. Such assessment will require a systems approach which integrates the characteristics of the setting with the expectations and demands of the user (Becker 1985).

LIMITATIONS OF THE STUDY

The scope of the investigation for this analysis specifically excludes or limits consideration of the following:

1. Induced demand based on new facilities to be constructed related to Mount St. Helens and the Columbia River Gorge National Scenic Area;
2. displaced and conflicting uses;
3. information about supply;
4. benefits-based management (insufficient information is available locally about benefit preferences. Benefits-based management research is continuing and will provide better understanding of demand as it relates to benefit opportunities); and
5. a comprehensive review of facility needs.

RESULTS

This portion reports the results of this study in three major sections. The first section describes the characteristics of users and how they use the Forest, including user demographic and trip profile data. The second section focuses on information about demand; specifically, recreation participation rates and setting preferences. The third section cites recreation trends and an analysis of their potential effect on recreation demand.

CHARACTERISTICS OF USERS

There are some basic questions concerning people visiting the Forest:

- Have they been to the site or area before?
- How often do they visit?
- How long do they stay?
- How many others do they come with?
- How far do they travel to get here?
- Where do they come from?
- What is the ratio of male and female?
- What are their ages?
- What is their education level?
- What is their employment status?
- How much do they earn?

In addition, demographic information about users can be useful for marketing and providing visitor information to make their experiences more enjoyable:

The answers to these questions have been summarized at the end of this section.

There are two surveys, related to specific activities in the Wind River area, that provide more detailed information about Forest users: *Recreation Opportunity Preferences of All Terrain Vehicle and Trailbike Riders* by Steve Nelson, and the *Campground User Profile* by John Bruin. Some information from these studies has been used for comparative purposes where Forest-wide data was unavailable. The reader interested in more information related to these activity areas should refer to the original documents.

Trip Profile Characteristics

Visitation

Four classifications of visitation are considered in this section: returning visits, frequency of visits, times visited, and annual patterns of visitation.

Return visitation varied somewhat by type of activity, as shown in FIGURE 3. In the Wind River District, at the south end of the Forest, 73 percent of the campers indicated they had been to the District in prior years (Bruin, 1990). In the Columbia River Gorge National Scenic Area (CRGNSA), 69 percent of those camping indicated they had previously been

to the site (USDA, 1992). These percentages are similar, with an average of 71 percent of developed campers returning. At the Wind River sites, the average user had been coming to the District for more than 5 years, with 9 percent returning for more than 20 years.

A study of dispersed users (those not using developed facilities such as campgrounds and picnic areas) at three sites in Forest Service Region 6 (Oregon and Washington) indicated that 85 percent of the campers and 74 percent of the day users have favorite

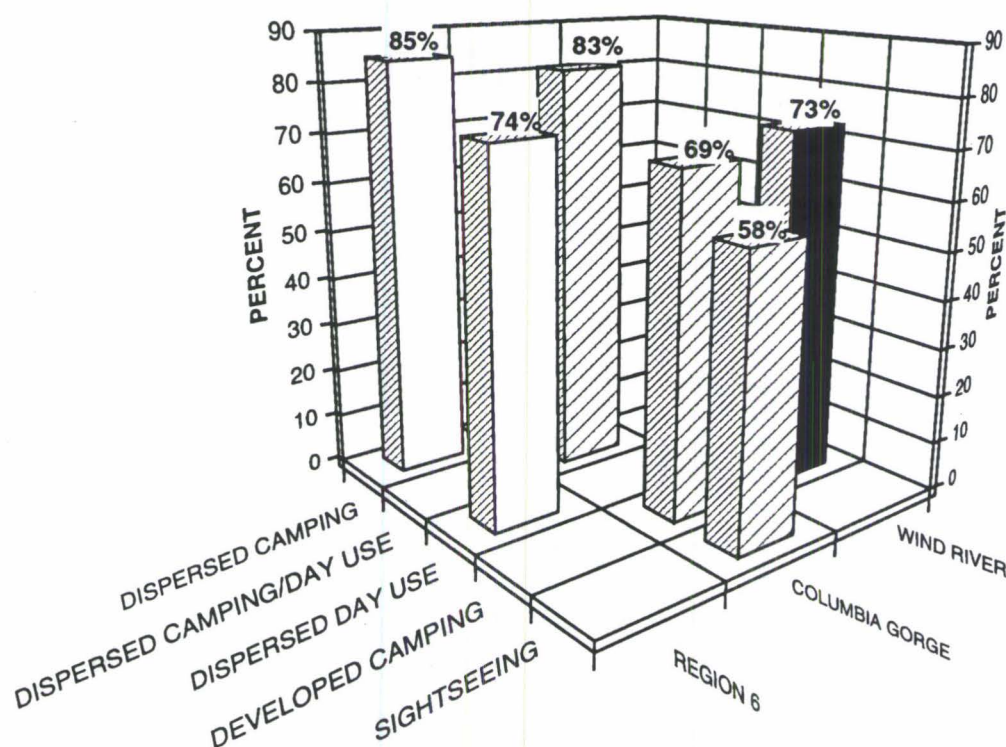


FIGURE 3: RETURNING USERS

spots to which they return, with nearly half returning to the same spot more than 11 times in the past (Clark, 1984). In the CRGNSA, 83 percent of dispersed users had previously been to the site (USDA, 1992). The findings are similar for the three studies shown here; the average is 81 percent returning for dispersed camping and day use, with only a 15 percent variation between the high and low figures.

By contrast, sightseers in the CRGNSA were less likely to return than campers and dispersed users. The overall high percentage of all repeat visitors may indicate the return of satisfied customers (USDA, 1992).

Another measure of visitation is the frequency of visits not specific to any activity. A recent survey (Steel, et al., 1992) provides visitation and frequency of visits information for respondents from the Portland, Oregon; Vancouver, Washington; and rural Washington areas (Clark, Skamania, Klickitat and Cowlitz counties). According to the survey, a majority of all groups indicated that they visit the Forest during their leisure time. Response from Vancouver and rural Washington area residents was similar to 87 percent of previous visitors who indicated that they have visited the Forest. The Portland area respondents were the least likely to visit the Forest, with 64 percent responding affirmatively.

Figure 4 shows that approximately two-thirds of the respondents from the Vancouver and rural Washington areas visit the Forest several or more times per year as compared to one-third of the Portland area respondents.

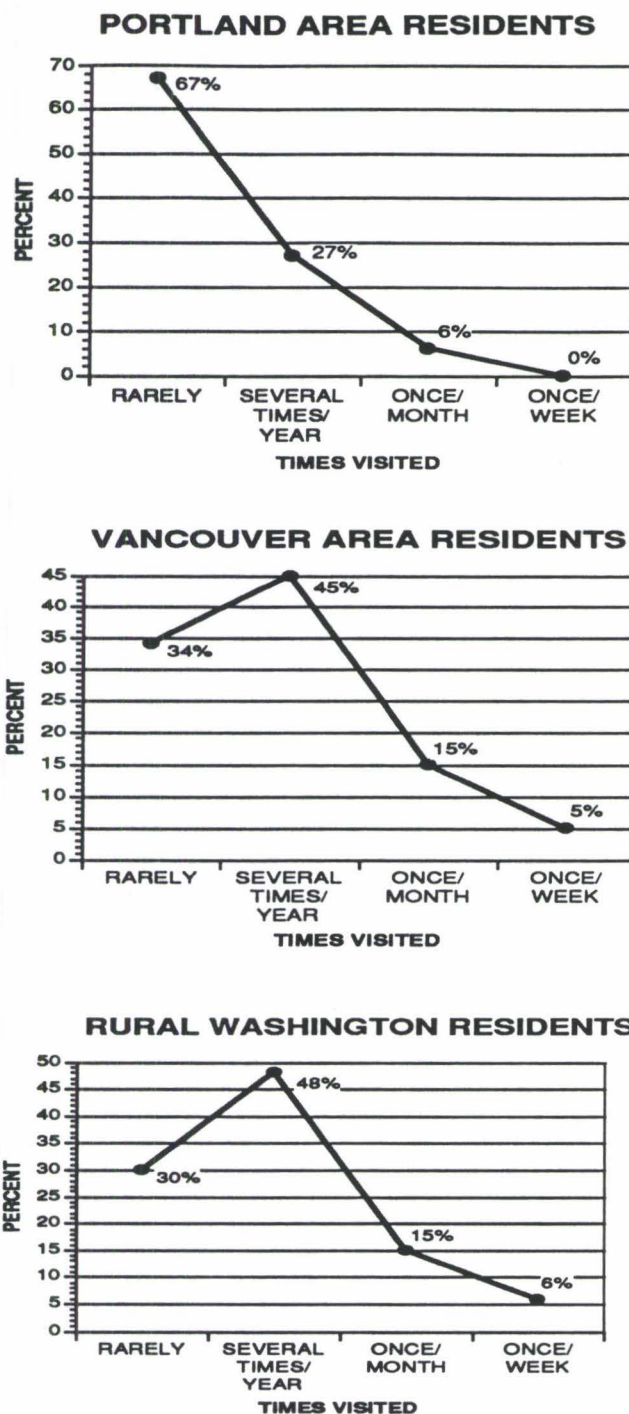


FIGURE 4: FREQUENCY OF VISITS
Source: Steel et al. 1993

Figure 5 shows 1992 visitation in terms of the number of times users visited the Forest. This relates primarily to nonmotorized users such as hikers, backpackers, and horse users. Approximately half are first-time visitors, while nearly one out of five have visited more than five times in the past.

Another measure of visitation, pattern of use, can be important for marketing purposes,

scheduling for operation, and maintenance efficiencies.

For contrasting purposes, Figure 6 shows the annual pattern of visitation for the Mount St. Helens Visitor Center and the Forest Wildernesses. As this figure shows, the pattern of use for the Wildernesses is influenced primarily by the short summer season, and seems to coincide with school

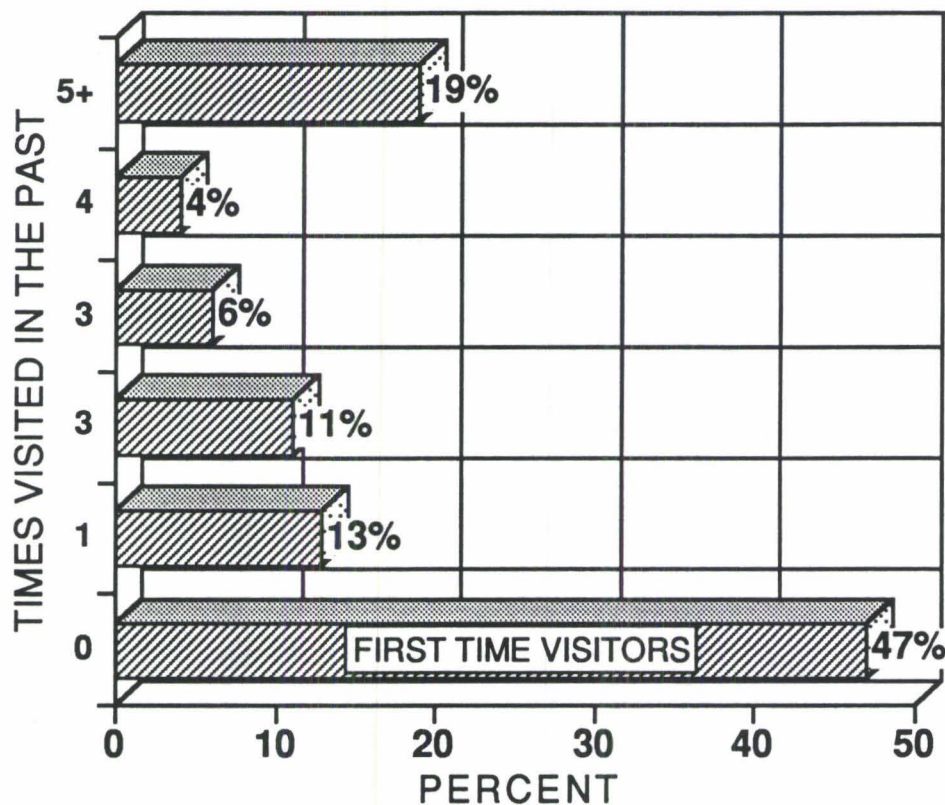


FIGURE 5: WILDERNESS VISITATION
Source: GPNF Wilderness Permit Data for 1992

summer vacations. The trend toward staggered school vacations has the potential to extend the use season. The Visitor Center is open year-round, but receives considerably less use during nonvacation months.

By encouraging use during the shoulder season during May, June, September, and

October, there would be better utilization of facilities, which often reach peak capacity during the summer months. On a statewide level, the State of Washington Department of Tourism has recognized this and is advertising reduced lodging rates and less crowding, to stimulate use.

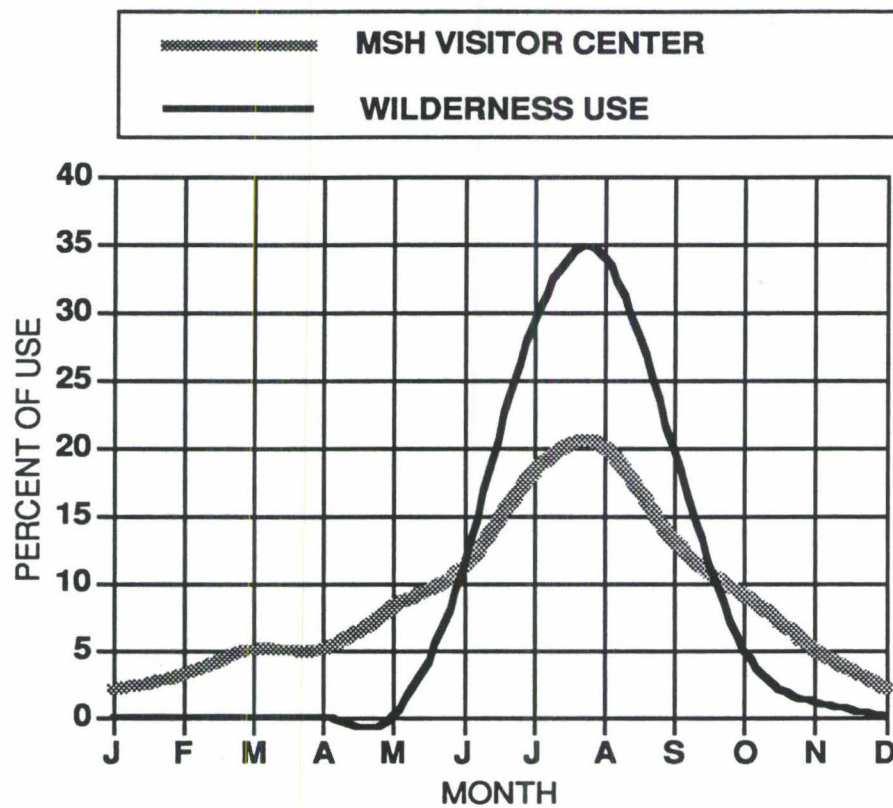


FIGURE 6: PATTERN OF VISITATION

Source: MSHVIC Visitor Counts, Wilderness Permit Data for 1992

Length of Stay

As expected, use records indicate that the majority of overnight use occurs on weekends and holidays. At Wind River, the average for developed camping is 2.6 nights per visitor, with 65 percent staying for 1 to 2 nights (Bruin, 1990). This compares with 38 percent of the campers in the CRGNSA, staying 1 to 2 nights (USDA, 1992). Figure 7 displays the length of stay in terms of the number of nights on site.

number of visitors staying 3 to 6 nights is 50 percent higher for the CRGNSA. Perhaps this is due to the additional activities which are available in the Columbia River Gorge. Several day-use activities for the CRGNSA include dispersed use, with 57 percent, and sight-seeing with 53 percent (USDA, 1992). Based on this information, approximately 55 percent of the visitors to the CRGNSA for sight-seeing and dispersed uses are day users only, and do not spend the night in the area.

Visitors to the CRGNSA developed sites are staying longer than those at Wind River. The

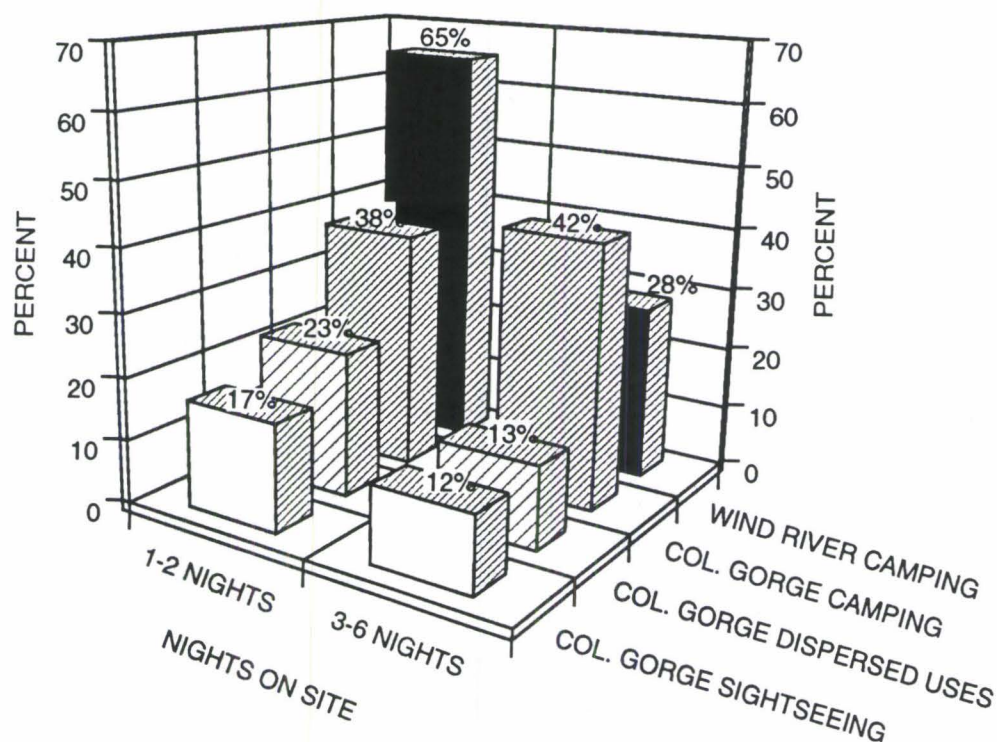


FIGURE 7: LENGTH OF STAY
Source: USDA 1992, Bruin 1989

The mean length of stay for dispersed campers in roaded multiple use areas was identified in the three areas studied as 2.6, 3.8, and 3.0 nights, respectively, for summer only (Clark, Kock, Hogans, Christensen, & Hendee, 1984). This gave an average of 3.1 nights for all areas. However, one site, popular with deer and elk hunters, had a mean average of 7.8 nights during hunting season, with many groups observed camping out for as long as two weeks. Based on this information, which correlates well with Forest field observations, length of stay is greater for hunters who camp than for any other user group. Length of stay is also greater for dispersed camping, with an average of 3.1 nights, compared with developed sites which have an average of 2.6 nights.

Group Size

Perhaps the best application of group size is related to developing fee structures and planning facilities. Group size information for camping, dispersed recreation, sight-seeing, and Wilderness use is shown in Figure 8. The average number in a group camping at Wind River was 3.3 individuals, with approximately 40 percent of the groups having 2 persons and 45 percent with 3 to 6 persons (Bruin, 1990). In the CRGNSA, 48 percent of campers were in groups of 2, followed by 39 percent with 3 to 6 individuals and 5 percent with only 1 person (USDA, 1992). Here, the average number of persons in a group was also 3.3. Overall, a slightly higher percentage of groups had from 3 to 6 individuals camping at Wind River than in the CRGNSA.

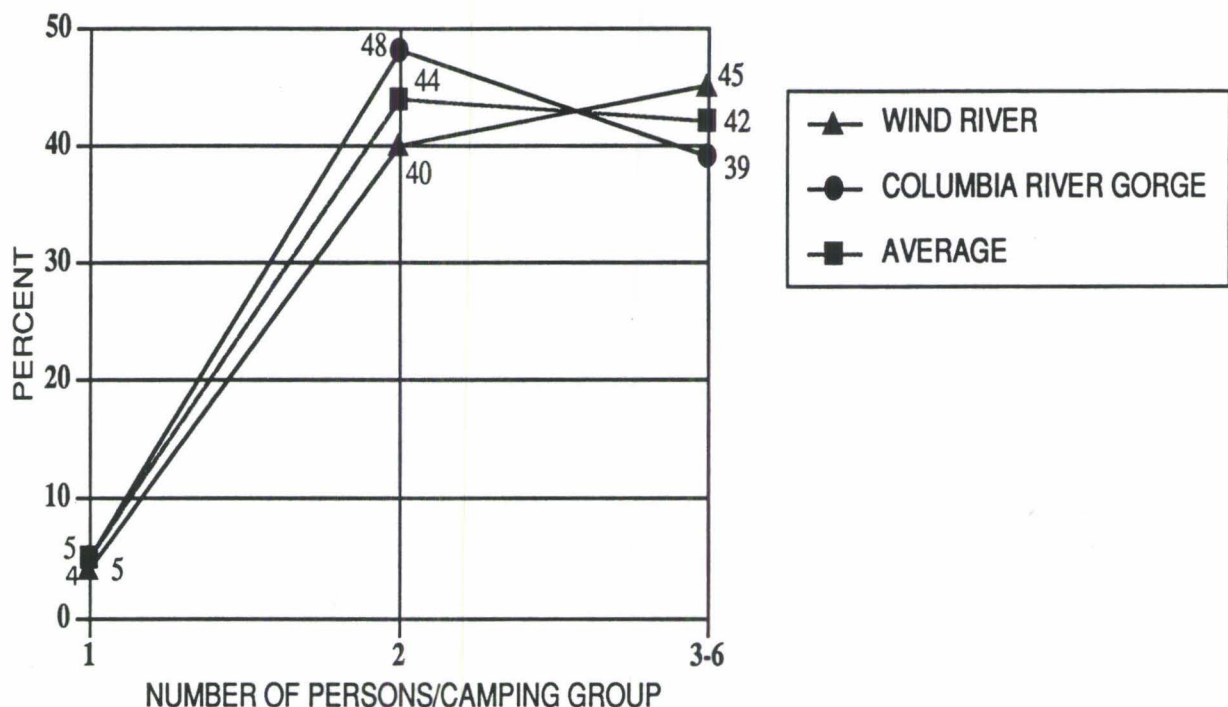


FIGURE 8: GROUP SIZE - CAMPING

Source: USDA 1992, Bruin 1989

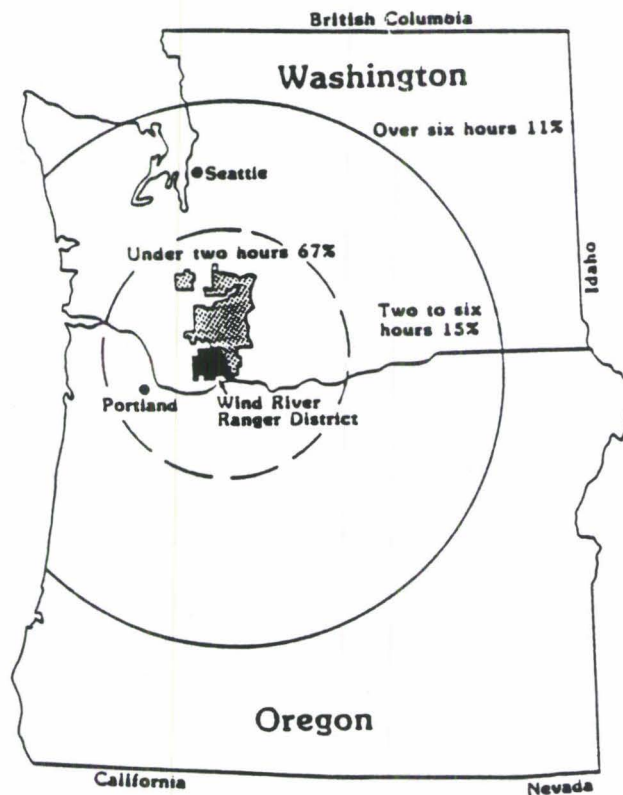
Distance Traveled

Most Forest visitors travel by personal vehicle to recreate on the Forest, and the majority live within a 6-hour drive of their destination. The following Map shows distance traveled to get to the Wind River recreation sites in the southern part of the Forest.

Sixty-seven percent of the Wind River campground users live within 2 hours of the area, 15 percent live within 2 to 6 hours, and 11 percent live more than 6 hours away (Bruin, 1990).

One factor that is difficult to account for in current survey data is the number of visitors who fly from a remote destination and then drive from the nearest airport to recreate in the Forest. This is considered insignificant except for visitation at Mount St. Helens, which enjoys an unusually large number of visitors from outside Oregon and Washington. See Figure 9 for Mount St. Helens Visitor Center visitor origins.

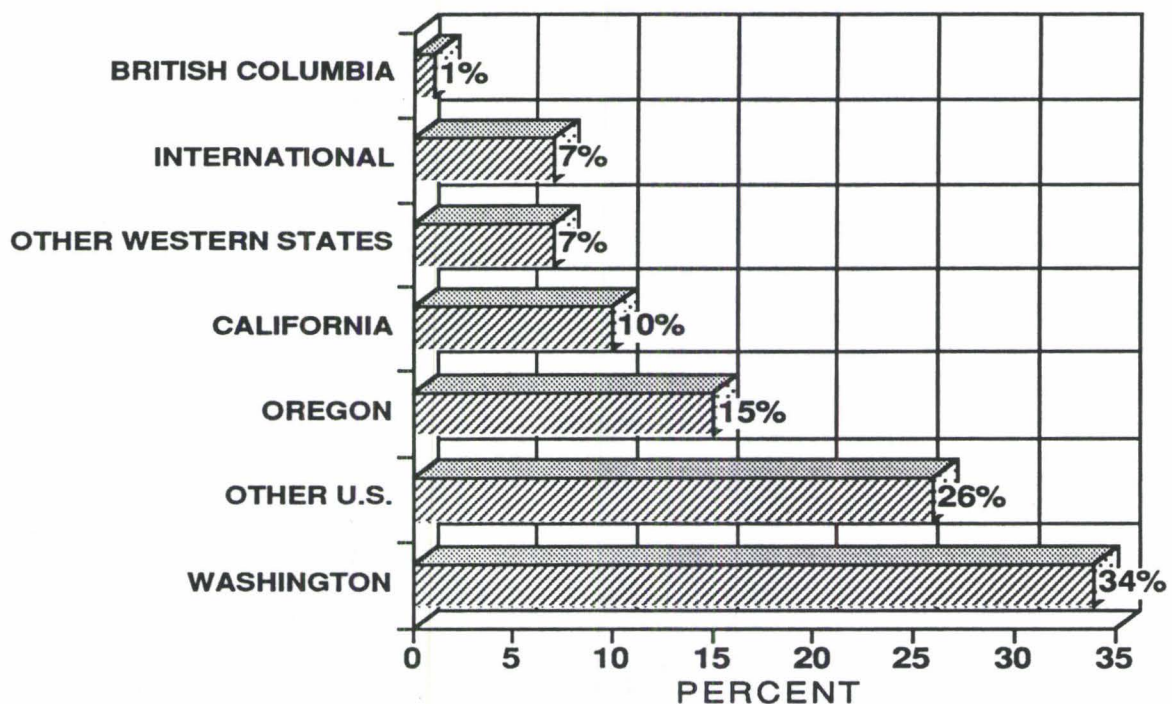
Distance from Wind River Map



Origin of Visitors

The following information is provided in order to give an idea of differing origination points for visitors participating in different types of activities. The area from which visitors originate is a central consideration in determining the market area.

Visitor Center user origins, shown in Figure 9, indicate that 49 percent of the use is from Washington and Oregon. The national and international draw of Mount St. Helens tends to skew the origin of visitors, and thus does not represent origin of visitors for Forest recreation activities not associated with Mount St. Helens.



**FIGURE 9: ORIGIN OF VISITORS -
MOUNT ST. HELENS VISITOR CENTER**

Source: 1987 Use Data

Implementation of a mandatory Wilderness Permit System in 1992 provided important information about the origin of Wilderness users in the Forest. Figure 10 displays information for 1992 use for Trapper Creek, Indian Heaven, Goat Rocks, Mt. Adams, Glacier View, and Tatoosh Wildernesses. Figure 11 displays the origins of users of the

Wind River Campgrounds for the 1989 use season, based on fee envelope information.

Approximately 92 percent of Wilderness users are from Washington and Oregon. This correlates closely with the Bruin findings for Wind River campgrounds, with 90 percent of the visitors from Washington and Oregon.

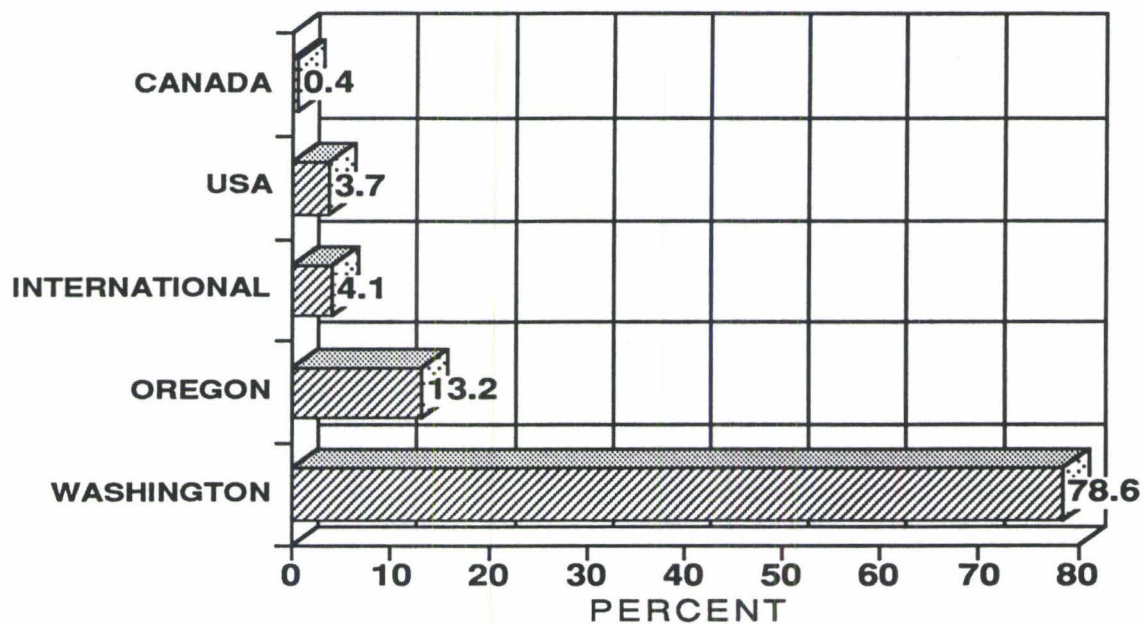


FIGURE 10: ORIGIN OF VISITORS - WILDERNESSES

Source: 1992 GPNF Wilderness Permit Data

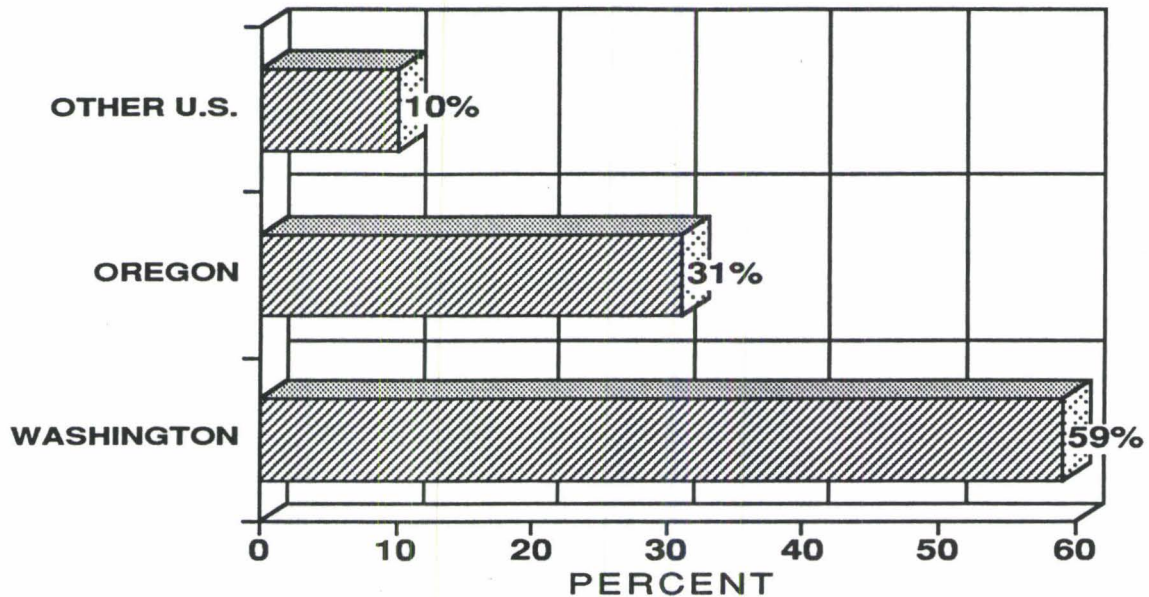


FIGURE 11: ORIGIN OF VISITORS - WIND RIVER CAMPGROUNDS

Source: Bruin 1989

The origin of visitor information also provides some qualitative differences about where visitors reside. The location of the Forest allows easy access for visitors from both Oregon and Washington. However, Figure 10 shows considerably fewer Wilderness

users from Oregon as compared with the Wind River campground users. This is probably due to the geographic proximity of the Wind River campgrounds to Oregon, and demonstrates that people will participate in recreation activities close to where they live.

Demographic Characteristics

Demographic variables are considered primary determinants of what type of people recreate, how they recreate, where they reside, and why they recreate. By becoming more aware of the people who use recreation resources, natural resource managers can do a better job of marketing; that is, matching them up with the right recreation opportunities at the right time and place. Demographic information can also be useful in project design and development, when determining such things as restroom capacities and expected audiences for interpretive signing. This section examines gender, age, education levels, employment, and household income.

Gender

Gender distribution information can help managers determine if the recreation opportunities are indeed targeted toward the predominant group. The *CRGNSA*

CUSTOMER survey included the three principal activities of developed camping, dispersed uses, and sight-seeing (USDA, 1992). The predominant user in all cases was male.

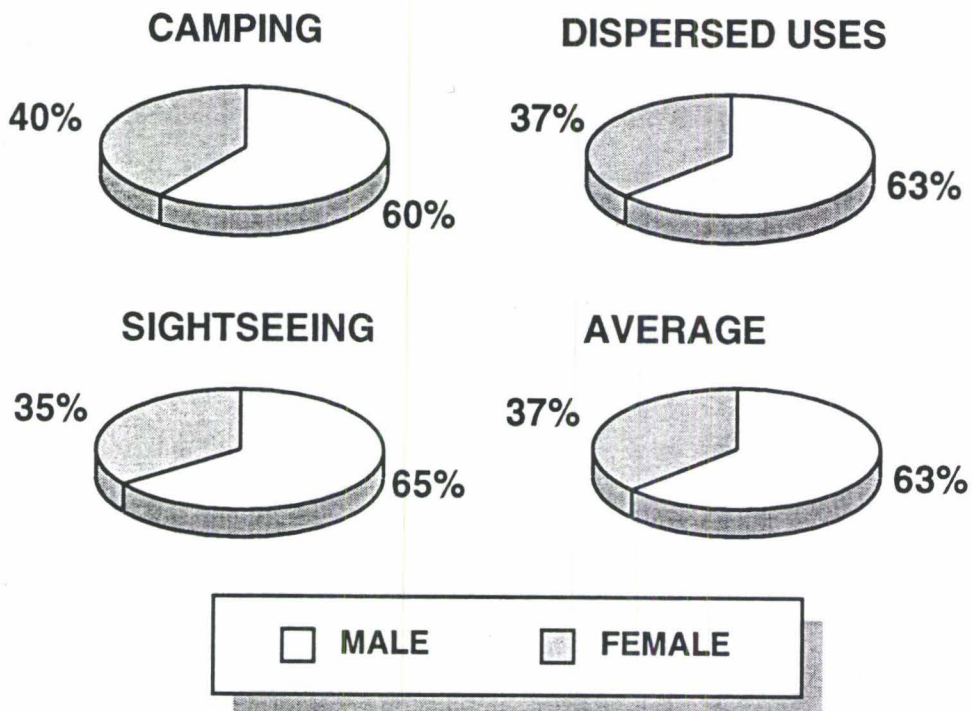


FIGURE 12: GENDER - CRGNSA USERS

Source: USDA 1992

Race/Ethnicity

Information about ethnic makeup is important for the purpose of marketing and facility development, due to significant differences in recreation participation by the different groups. Figure 13 shows participation rates of 94.7 for whites and 5.7 for all other groups. This compares with the U.S. population

percentages of 81 percent for whites and 19 percent for non-whites (USDA, 1992).

Significant trends affecting ethnic makeup are detailed in the section of this document describing social trends.

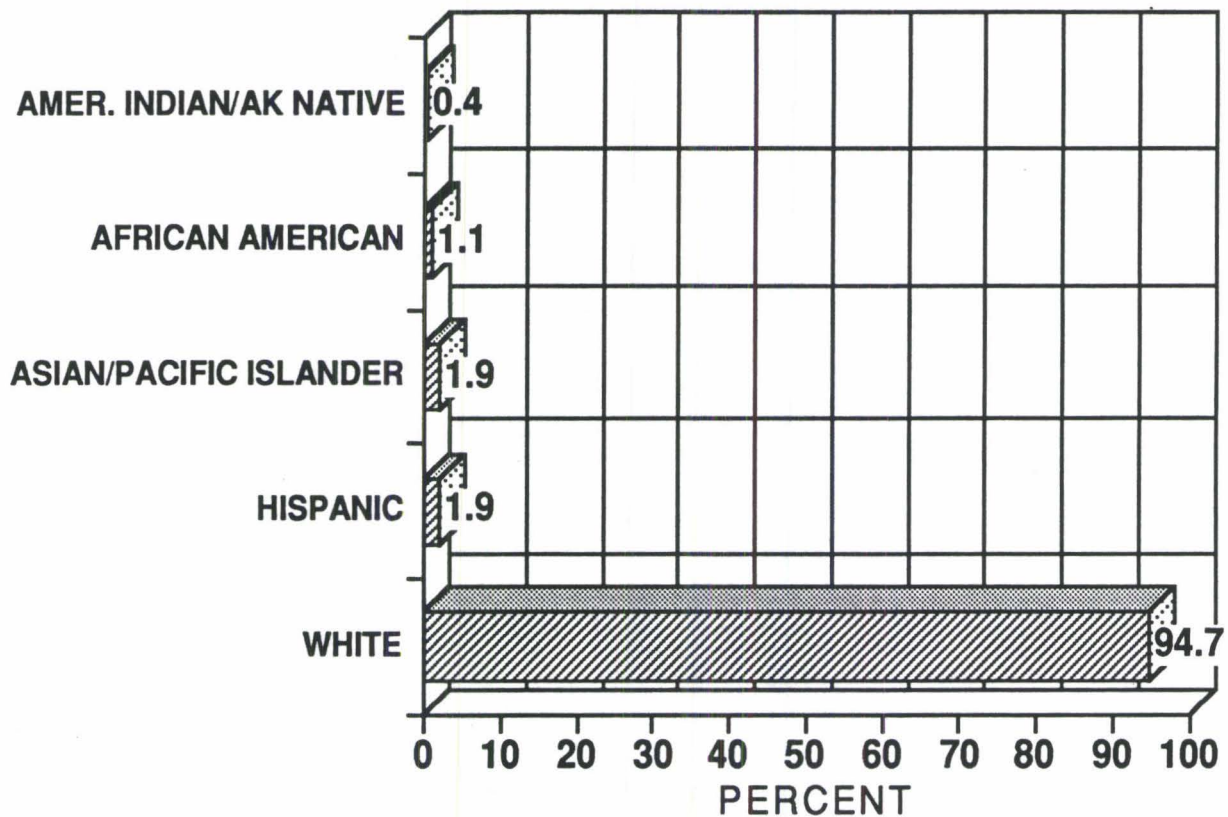


FIGURE 13: RACE/ETHNICITY

Source: USDA 1992

Age

Age is a primary determinant of outdoor recreation participation. There is a correlation between age and the more physical outdoor recreation pursuits, showing a decline in these activities as age progresses. Managers should decide if more emphasis on facilities for children or older visitors should be provided.

In the Wind River campground study (Figure 14), the majority of visitors were in the 30- to 50-year-old category (57 percent), with 29 percent more than 50 years old and 14 percent less than 30 years old (Bruin, 1990).

The group 50 years of age plus is expected to increase because of the baby-boom age wave. The baby-boom generation, generally those born between 1946 and 1964, has been heavily socialized into outdoor recreation behavior. Boomers are more likely to be in better health and more active later in their lives than their parents were at the same age (Washington IAC, 1990).

Figure 15 shows the age group distribution for the State of Washington by decade from 1990 projected to the year 2010.

LESS THAN 30 YEARS

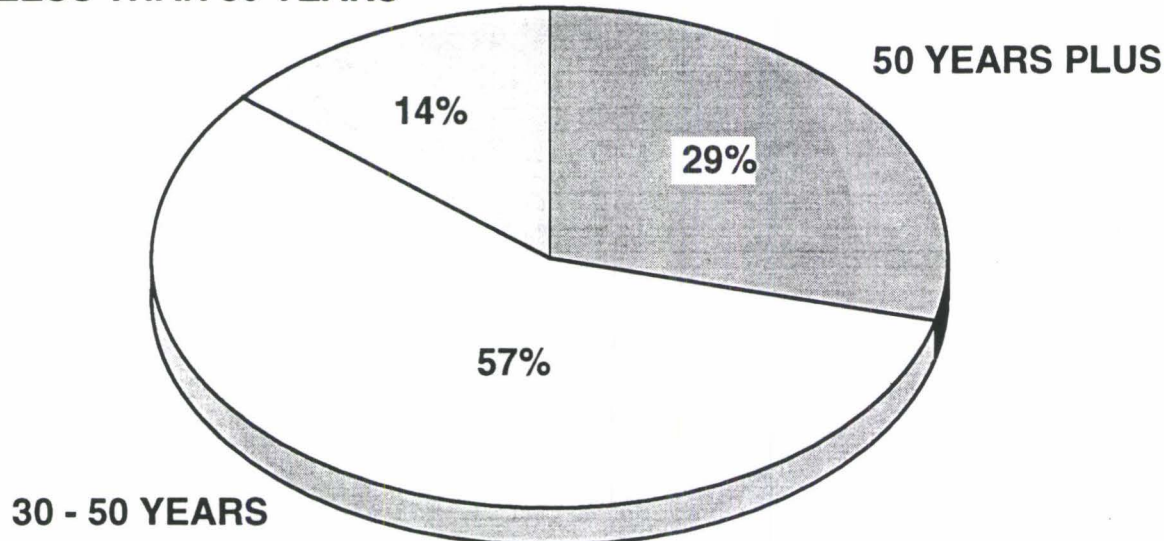


FIGURE 14: AGE GROUPS - WIND RIVER CAMPGROUNDS USERS

Source: Bruin 1989

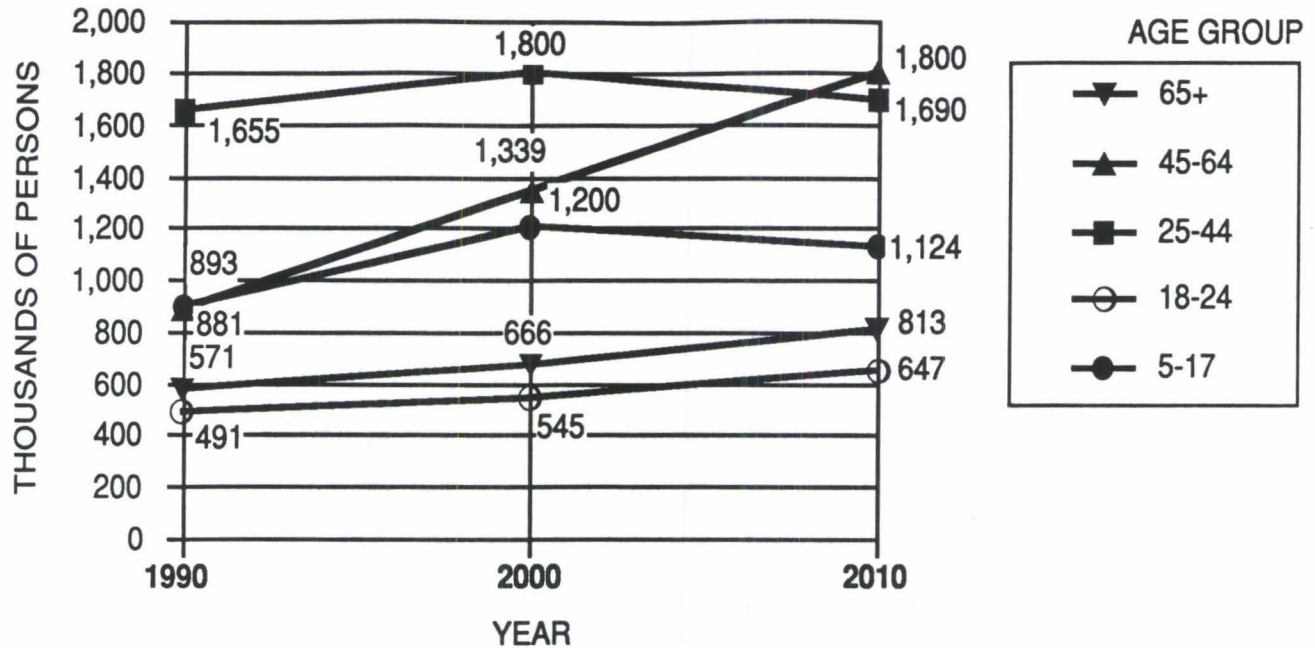


FIGURE 15: WASHINGTON STATE AGE GROUP DISTRIBUTION 1990-2010
Source: Washington OFM

According to the Washington State Forecasts of the State Population data (Washington, 1992), the median age of the population of Washington was 33 in 1990 and is predicted to grow to 36 by the year 2000. There probably will be significant changes in statewide population groups, as follows:

- The number of persons ages 5 to 17 years is predicted to increase 25 percent between 1990 and 2000, to 1.12 million.
- The number of young adults ages 18 to 24 years is declining from its 1990 level of 491,000, and will probably reach a low in 1996, and then grow steadily through the year 2000.
- The number of working age adults from 25 to 44 will probably increase by 11 percent from 1990 to 2000, to a total of 1.8 million.
- The age group from 45 to 64 is predicted to increase substantially (52 percent) as the baby-boom generation matures, reaching 1.3 million by the end of the decade.
- The age group exceeding 65 will, in all likelihood, probably increase by 17 percent between 1990 and 2000, to a total of 666,000.
- The age group exceeding 75 is predicted to increase by 35 percent during the same period, reaching 322,000.

Education Level

Information about the education levels of Forest users is an indicator of their ability to assimilate information from a variety of sources. Generally, recreation participation increases with increased education levels. However, it has been found that people with relatively lower education levels recreated in National Forests rather than those with higher education levels (USDA CUSTOMER, 1992).

Figure 16 shows recreationists (developed camping, dispersed uses, and sightseeing)

in the Columbia Gorge included a high percentage who had some college or had obtained a bachelor's degree (68 percent).

Approximately 25 percent had obtained a high school diploma but did not continue with college. Only 7 percent were without a high school diploma (USDA, 1992). Most likely some in this group were children not old enough to have graduated. This means that 93 percent of the users had at least a high school education or higher.

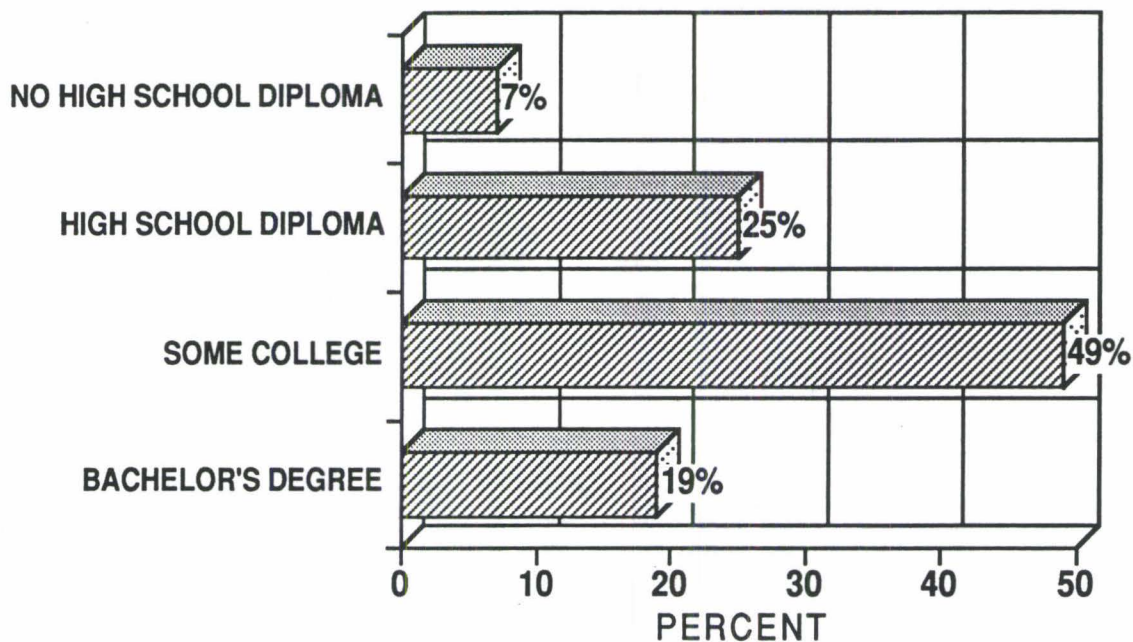


FIGURE 16: EDUCATION
Source: USDA CUSTOMER 1992

Employment

Figure 17 displays employment distribution for users of the CRGNSA.

Nearly two thirds (63 percent) of users are either retired or working full-time.

Students, homemakers, and retirees are considered among the employment categories, even though they are not generally thought of as employed.

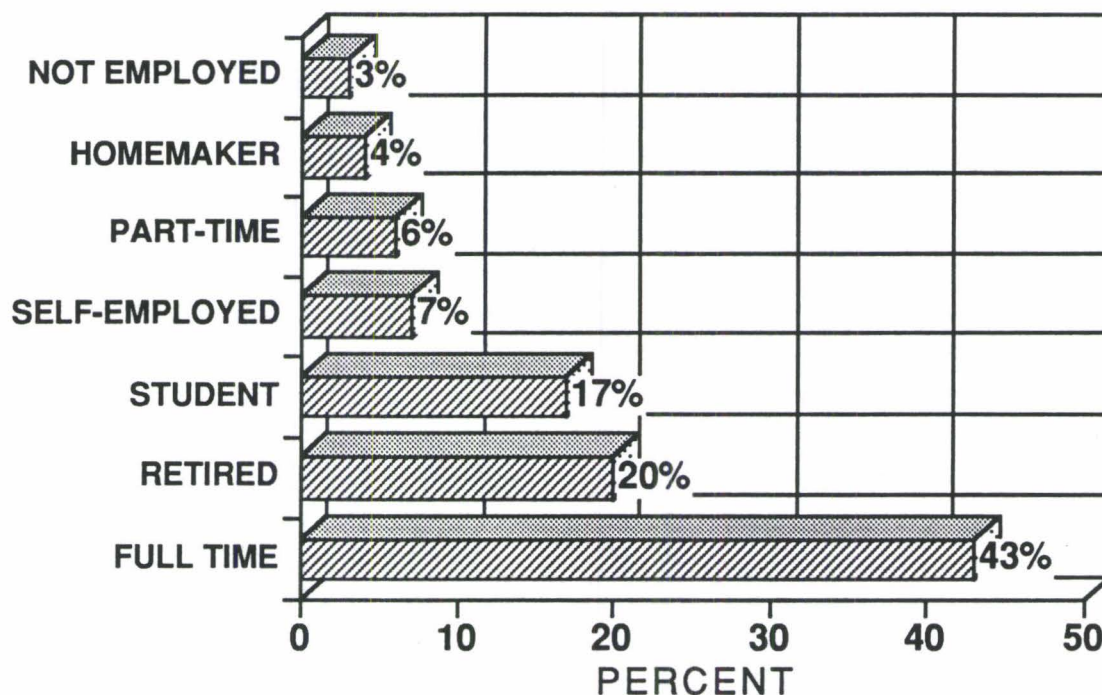


FIGURE 17: EMPLOYMENT

Source: USDA 1992

Household Income

Recreational use of the Forest represents a commitment of discretionary money as well as time. Figure 18 shows that 4 out of 10 users are in the \$25,000 to \$50,000 household income group. Approximately 35 percent of the households have an income of more than \$50,000. The 22 percent of the users with an

income less than \$25,000 per year may be an indicator of low ability to pay for Forest related services.

According to 1992 Washington State forecasts of the state population, the number of working age adults in their prime earning years will increase in size by 52 percent.

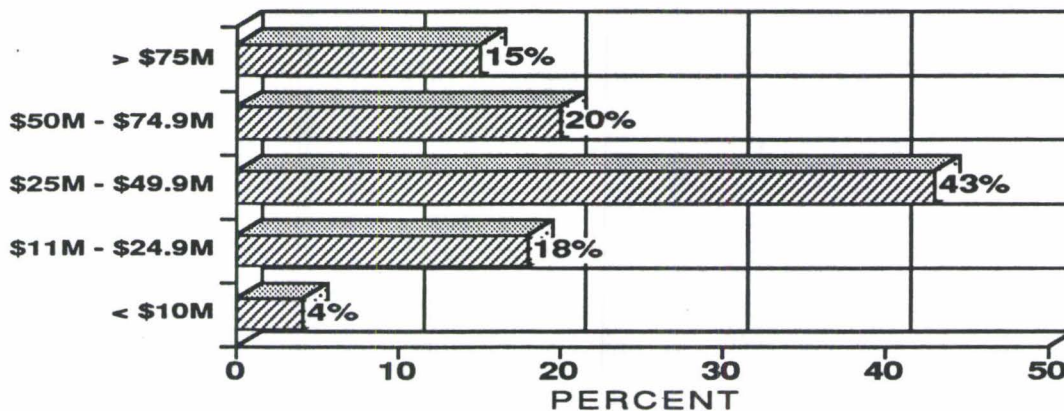


FIGURE 18: HOUSEHOLD INCOME

Source: USDA 1992

User Characteristics

The following information is based on the analysis of trip profile and demographic data and represents the predominant use or characteristic:

- white male, from 25 to 41 years of age (Note: 50% more men than women visit the Forest);
- high school graduate with some college and possibly a bachelor's degree;
- employed full-time;
- family income of \$25,000 to \$45,000 per year;
- previously visited the Forest many times;
- currently visits several times a year;
- if camping, will stay one to two nights;
- will usually visit the Forest with one or two other persons;
- will have traveled less than two hours from home; and
- will participate in several activities, which might likely include sight-seeing and nature study.

DEMAND PROJECTIONS

Recreation demand can be examined at several levels. People are involved in recreation activities, within recreation settings, to achieve experiences which contribute to personal and social benefits. This section focuses on demand at the activity and locational setting preferences. It also includes a discussion of population projections related to recreation demand.

Activity Participation

This section provides an analysis of anticipated recreation activity participation rates for the decade 1990 to 2000, using data from Washington SCORP. This source utilized activity participation information from the *Pacific Northwest Demand Survey* done in 1987, which used a modified version of the U.S. Forest Service national recreational use projection models. The percentage of increase for each of the activities listed was derived

from these recreation projection models, based on assumptions about future population, age structure, income, and supply of opportunities. The WA SCORP projections are based on conservative scenarios of each of these criteria.

The following chart compares recreation participation rates by activity category, based on 1991 use figures for the Forest.

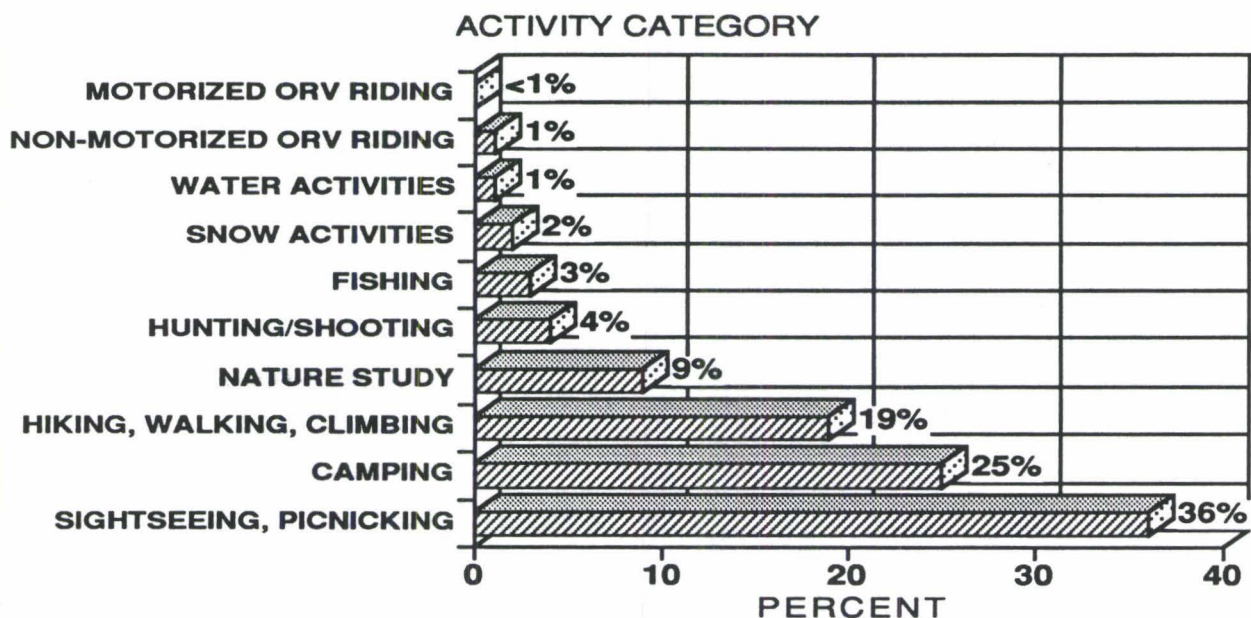


FIGURE 19: ACTIVITY PARTICIPATION
Source: GPNF 1991 RRIS Data (based on RVD's)

Unfortunately, the data collected through the Recreation Resource Information System during the past 3 years was not considered valid enough to use for comparative purposes, nor as a baseline. The information shown in Figure 19 provides a general comparison of activity participation by activity category. For a list of activities included in each activity category, see Figure 21.

Based on the information shown in Figure 20, a small percentage of the population of Oregon

recreated in Washington, Region 2, in 1986. Since that time there have been several changes that would indicate use from Oregon to be significantly higher than shown. Several key factors related to demand from Oregon include saturation, displacement and access. Surplus demand for some activities is reaching the Forest as some Oregonians seek to recreate in a less crowded setting. In addition, the I-205 - Glen Jackson Bridge (across the Columbia River) and improved road access on the southern portion of the Forest provide improved access for Oregon visitors.

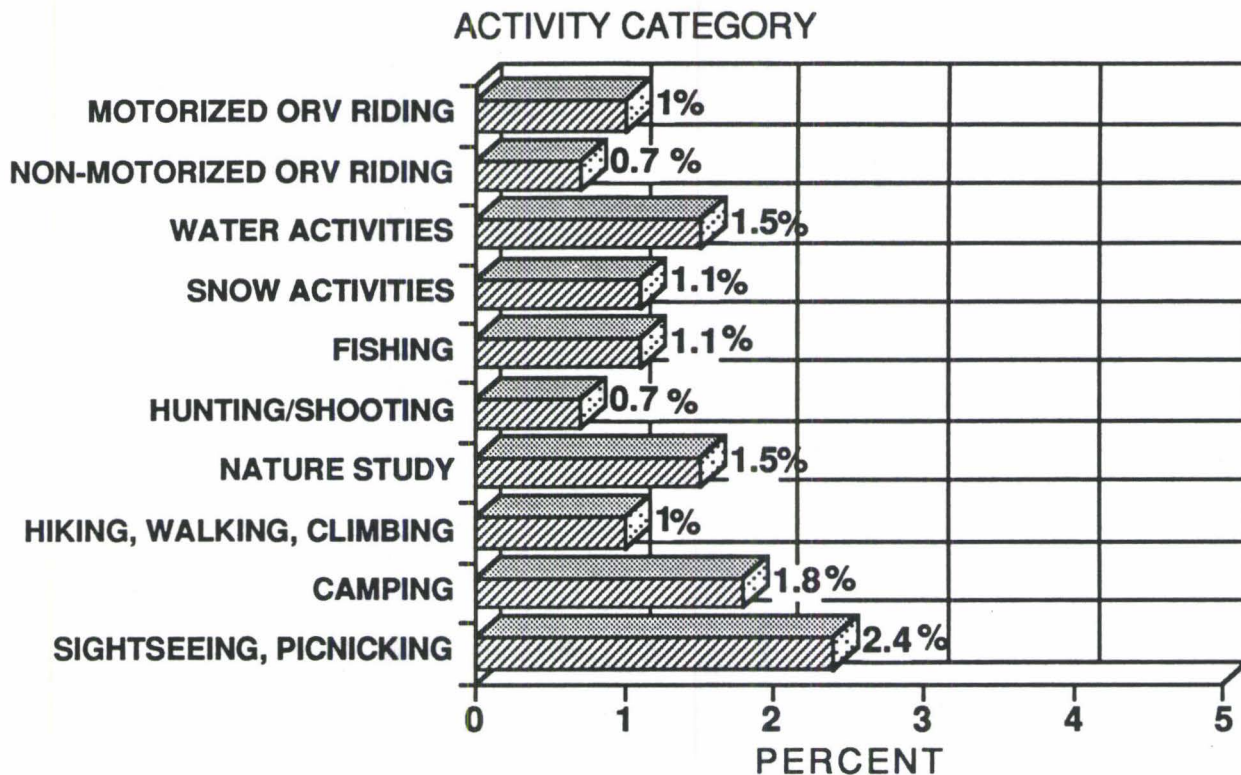


FIGURE 20: ACTIVITY PARTICIPATION BY OREGONIANS

Source: USDA 1992

Figure 21 shows selected activities which occur in the Forest and their projected rate of increase over the decade from 1990 to 2000. Activity demand shown in Figure 21 is extrapolated from projected growth by activity in WA SCORP, Region 2, which includes the Gifford Pinchot National Forest. Region 2 includes the following counties in Washington: Clark, Cowlitz, King, Kitsap, Klickitat, Lewis, Mason, Pierce, and Snohomish. The projected demand does not include demand from Oregon. Thus the actual projections might be somewhat higher than shown. Demand for most activities shown in Figures 21 and 22 is expected to grow faster than the State population rate of 18 percent for the same period. Statewide, Region 2, which contains the Gifford Pinchot National Forest, is predicted to experience a greater increase in recreation participation than any other region in Washington (Washington IAC, 1990).

To get a better understanding of the relationship of the average projected rates of increase, the activities have been grouped into three categories: low, moderate, and high. Low-growth activities are defined as those activities projected to grow at 20 percent or less per decade. Moderate-growth activities are those activities projected to grow from 21 to 29 percent per decade. High growth are those activities projected to grow at 30 percent or more per decade.

**FIGURE 21: INCREASED ACTIVITY PARTICIPATION
BY ACTIVITY GROUP, 1990 TO 2000**

ACTIVITY	PERCENT OF INCREASE WASHINGTON REGION 2
Fishing	
Freshwater Fishing, Boat	22
Freshwater Fishing, Shore	18
Water Activities	
Swimming and Wading at a Beach	25
Lake, Non-Motorized Boating	28
Nature Study	
Visiting Interpretive Centers	38
Nature Study and Wildlife Observation	32
Outdoor Photography	35
Hiking, Walking, Climbing	
Day Hiking on Trails	32
Backpacking (Along Trails)	25
Backpacking (No Trails)	27
Climbing and Mountaineering	30
Camping	
Organized Group Camping	22
Tent Camping with Motorized Vehicles	28
Recreational Vehicle Camping	29
Horse Camping with Pack Stock	19
Horse Camping without Pack Stock	22
Snow Activities	
Cross-Country Skiing and Snowshoeing	30
Sledding and General Snow Play	30
Snowmobiling	20
All Terrain Vehicles Driving in Snow	26
Riding Motorized Vehicles Off Road	
Motorcycles	29
All-Terrain Vehicle driving	27
4-Wheel Drive Vehicle driving	31
Non-Motorized Riding	
Bicycling Off Road	31
Horseback Riding	18
Sight-seeing, Picnicking	
Sight-seeing and Exploring	29
Bus Touring	25
Picnicking	35
Hunting	
Big Game	17
Upland Birds, Small Game, Waterfowl	09
Bow Hunting	12

ANTICIPATED GROWTH, 1990 TO 2000

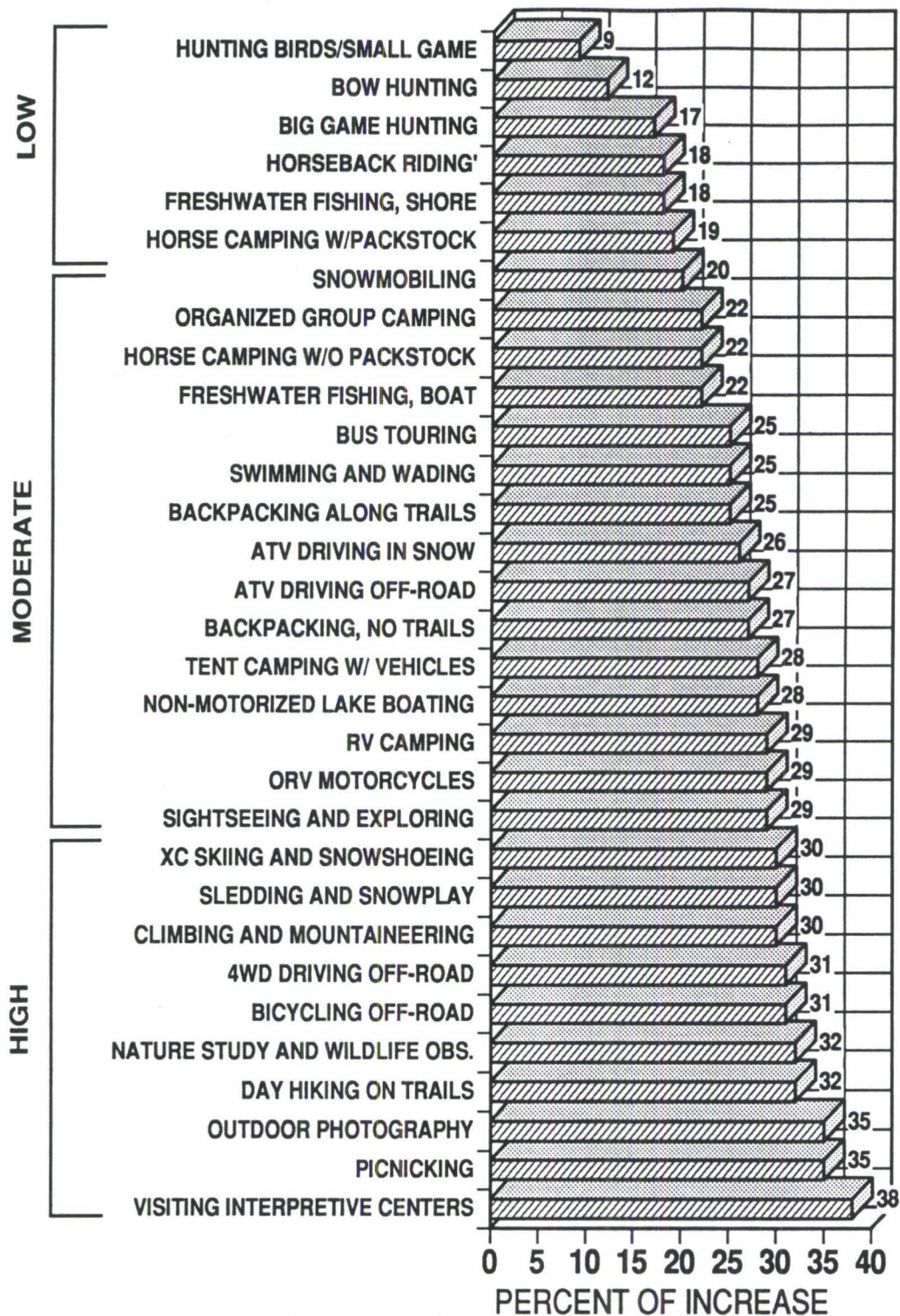


FIGURE 22: ACTIVITY GROWTH - WASHINGTON REGION 2

Source: Washington 1990

Opportunity Settings for Outdoor Recreation

Recreationists seek an appropriate setting for their activities where they can realize their desired experience. The recreation setting combines various physical, social, and managerial attributes. (See Appendix B for descriptions.) A determination of setting needs requires the development of two components: demand and supply. This study includes the first component, demand. Comparing demand for ROS settings with supply provides an estimate of need for such settings in the Forest. This will likely be accomplished as a part of the Forest planning process.

Recreation settings for this study are defined by the Recreation Opportunity Spectrum (ROS). Appendix B contains a more detailed description of the ROS Classes. The Primitive ROS class setting preferences have been included even though the Forest has no additional primitive opportunities not already protected within Wilderness. The ROS settings used and preferred by Washingtonians in Region 2 (Washington IAC, 1990) are compared by activity category. For many categories, there is a discrepancy between the setting last used and the setting preferred. This may be due to such things as higher opportunity costs.

People tend to recreate in the setting that is within their perceived time and money value

constraints. To recreate where they prefer may require additional travel time and money without commensurate benefit value gained.

Thus, demand expressed and measured by participation is dependent on supply or available opportunity. It assumes that the current relationship between users and resources is desirable or tolerable (Washington IAC, 1990).

The ROS class settings used and preferred are based on statewide data for Washington. (See Appendix A.) Data about the origin of visitors and travel time suggests that the majority of Forest users are from Washington. For additional information, see *Characteristics of Users, Trip Profile Characteristics*.

By understanding current recreation behavior and some of the factors influencing it, predictions about future demand can be made. For most activities, users demand a variety of recreation settings. This is a result of different experiences for each ROS setting and, therefore, understanding the demand for each setting is important when making recreation resource allocation decisions. Figure 23 provides a comparison and preference of settings used by recreationists by activity category.

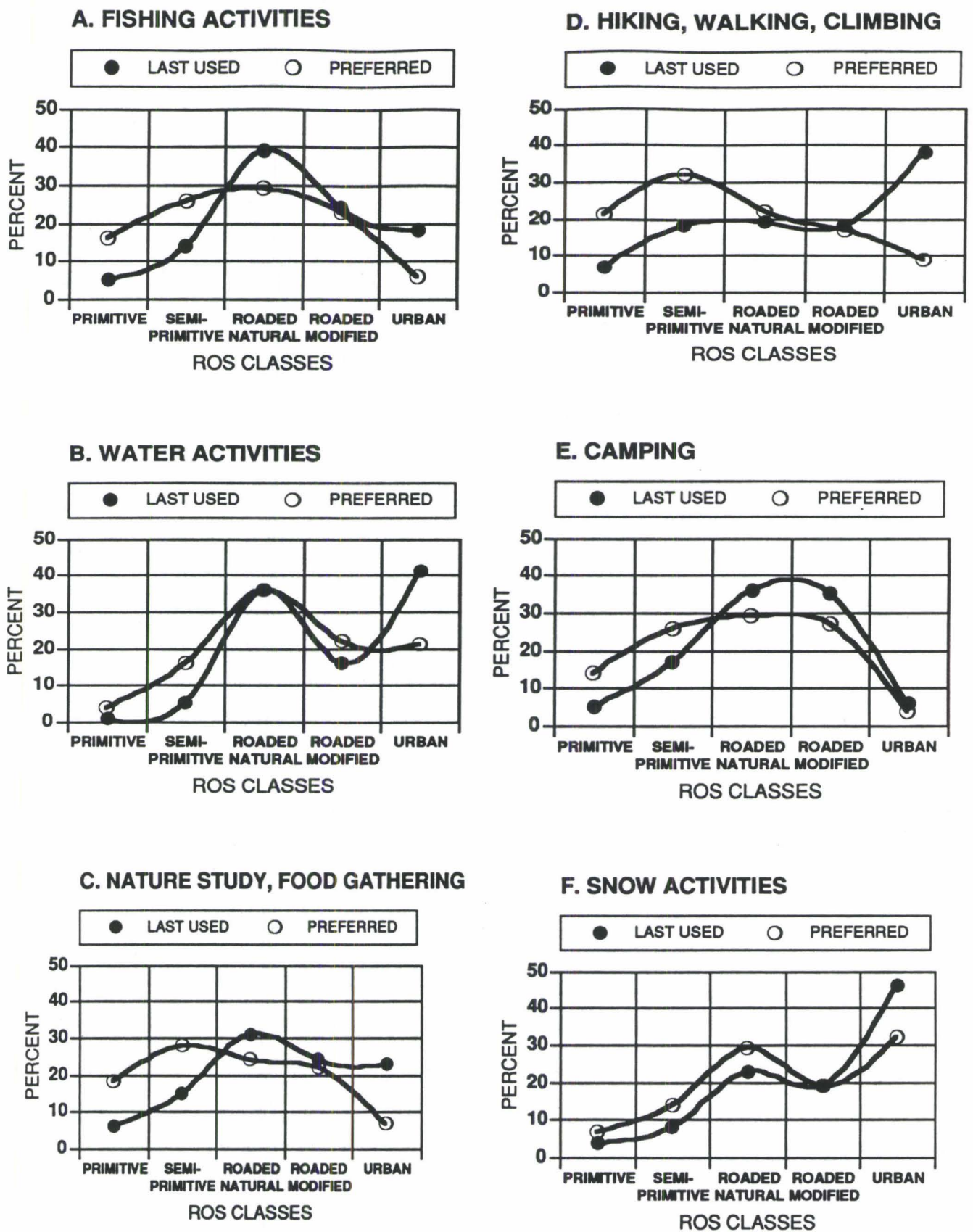
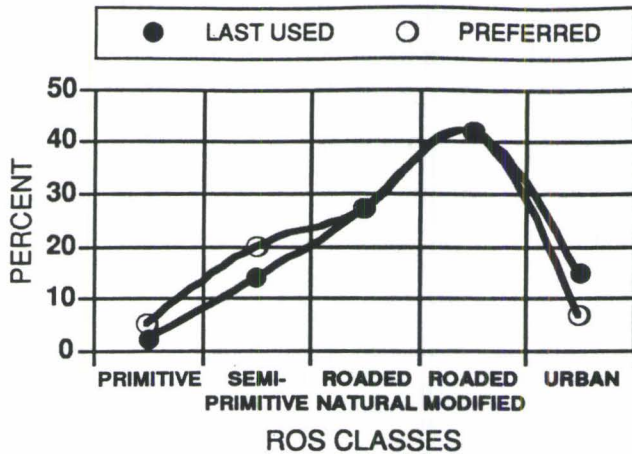
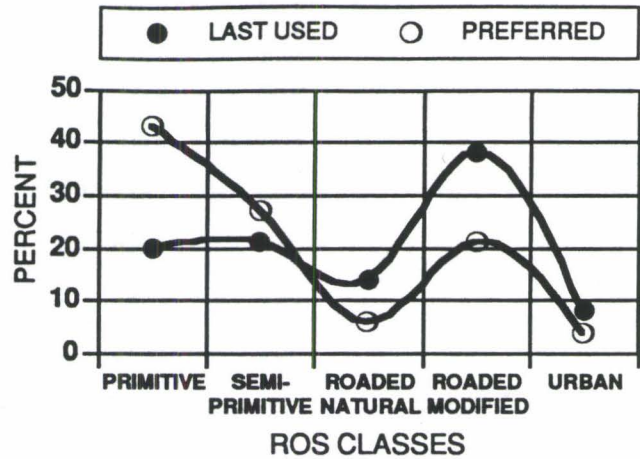


FIGURE 23: A-L ACTIVITIES BY ROS CLASS
Source: Washington, 1992

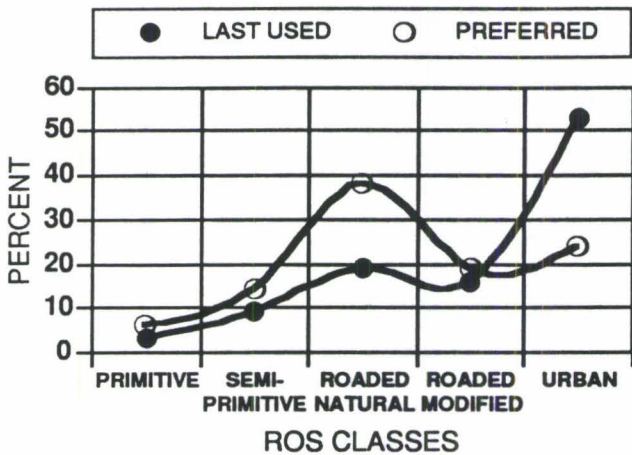
G. MOTOR. ORV RIDING/DRIVING



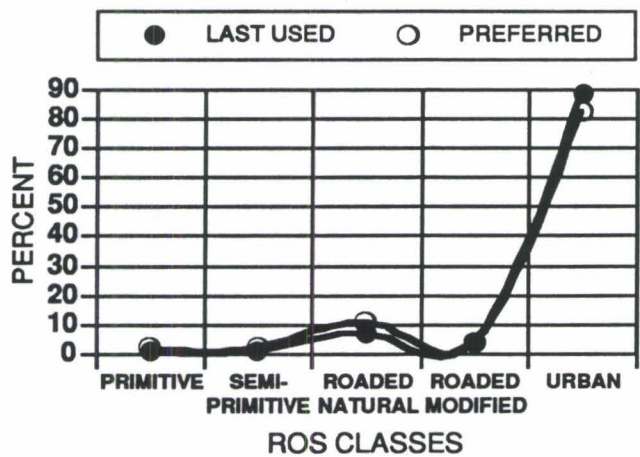
J. HUNTING, SHOOTING



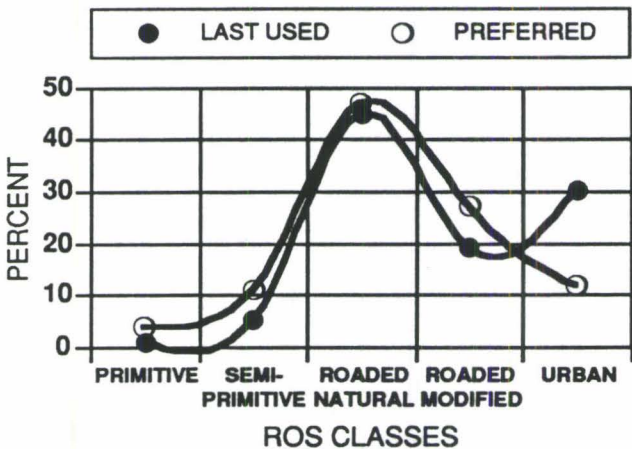
H. NON-MOTOR. RIDING



K. SPORTS, GAMES



I. SIGHTSEEING, PICNICKING



L. AVERAGE OF ACTIVITIES A-J

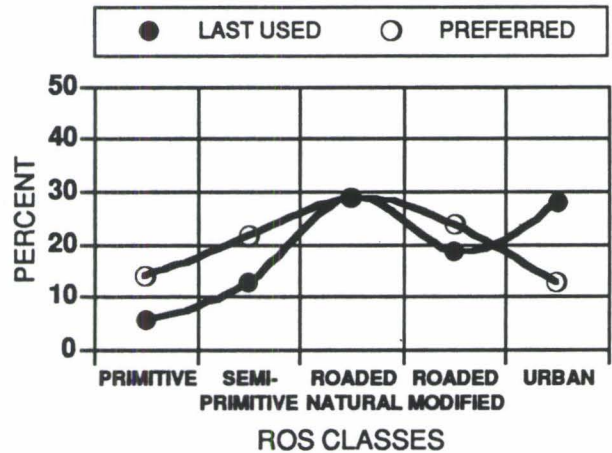


FIGURE 23: A-L ACTIVITIES BY ROS CLASS
(Continued)

For most activities, recreationists use a variety of settings. By combining the preferences and settings used for all activities, a pattern emerges showing significant relationships between the ROS class settings. The analysis of use of and preference for all activities combined (Figure 23L) indicates that over twice as many visitors would like to recreate in a semiprimitive setting compared to the number currently using this setting. Clearly, the predominant setting preference is for a primitive/semiprimitive (34%) followed by roaded natural (29%), roaded modified (21%), and rural/urban (16%). The primitive/semiprimitive and roaded natural settings combined represent 63% of settings preferred by recreationists. The common attribute that differentiates these settings from the roaded modified and rural/urban settings is that they are essentially natural or natural-appearing to the Forest visitor. Use of and preference for the roaded natural setting is nearly equal, while more persons appear to be using roaded modified and rural/urban settings than would prefer to. Opportunities for natural or natural-appearing settings occur most frequently on publicly-owned lands such as National Forests and National Parks, which may be the best place to look for settings that will meet these user needs in the future.

Certain recreation settings appear to be preferred by recreationists for specific activities. For instance, primitive/semiprimitive settings are preferred for hunting and shooting (60%), fishing (48%), nature activities (42%), hiking (50%), and camping (44%). And yet, except for hunting, less than half the amount of those who prefer this setting are actually using it. Perhaps the contrast may be due to the shortage of such settings close to population centers (Washington IAC, 1990). Another reason might be the higher opportunity cost, which could be reduced by providing the more preferred settings closer to where people live.

Population Projections

Recreation demand is closely related to population. As the population increases, outdoor recreation demand is predicted to rise. In this section, the population forecasts are compared for the States of Washington and Oregon; Clark County, Washington, and the Portland metropolitan area, which includes Multnomah, Yamhill, Clackamas and Washington Counties. Analysis of travel times for Forest recreationists indicates that the majority of visitors travel less than 6 hours to visit the Forest. Driving Times Map shows that for residents of the largest population centers in Washington and Oregon (Seattle and Portland), the Forest is well within this 6-hour range.

DRIVING TIMES MAP



Comparison of population projections for the market area (Figure 24) indicates growth ranging from 18 percent to 22 percent during the next decade. Despite a national recession, the economy of the Pacific Northwest has remained relatively stable and is expected to continue to attract new residents. For example, Clark County's population is expected to increase 22 percent between 1990 and 2000 (Washington Office of Financial Management, 1992). At this rate, the

population will double within the next thirty years.

What does this mean for the Forest? As housing, business, and industry compete with recreation for timber resources, existing and potential recreation settings in all likelihood will continue to change and become more developed. Natural settings for recreation will become even more scarce and valuable (Washington IAC, 1990).

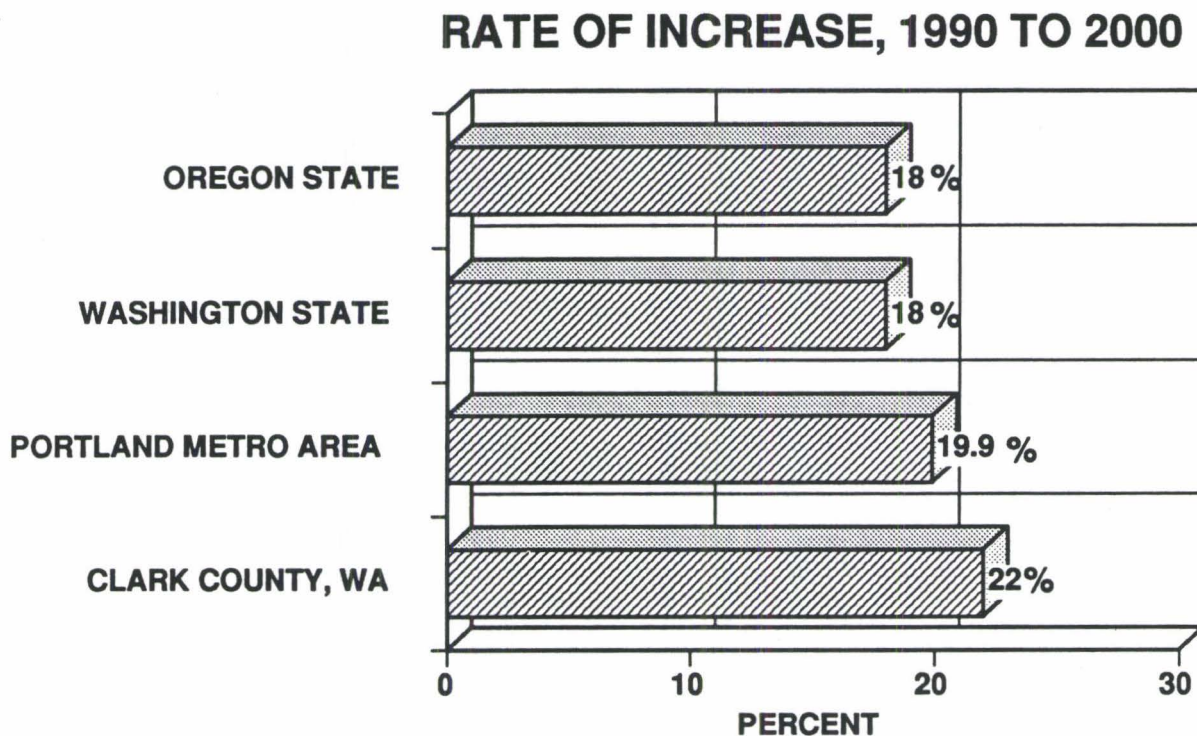


FIGURE 24: POPULATION FORECAST

Sources: Portland State University Population Research Center,
Washington State Office of Financial Management

TRENDS AND POTENTIAL EFFECTS ON NATIONAL FOREST RECREATION

In order to successfully provide recreation opportunities in a dynamic environment, Forest managers need to be able to accurately identify significant forces of change and agree on methods of accommodating them for competitive advantage and growth. This section describes current trends which may have profound influences on recreation planning and development in the coming decades.

There are many trends that are societal and global in nature that will effect recreation across the country. These include such things as population demographics, education, restructuring of government, slowdown of economic growth, technological advances, and maturation of the population. Newspapers and magazines document many events shaping the future.

To understand how outdoor recreation demand may change in the future, relevant national trends, as well as those trends that are specific to the Region and the Forest, need to be analyzed. By understanding and accepting these trends and their predicted effect on demand, response options can be developed. The following trends, identified from a variety of literature sources, are expected to significantly affect National Forest outdoor recreation in the 21st century.

This section is divided into five sections: economic trends, environmental trends, political trends, sociological trends, and technological and scientific trends. Since, there is considerable overlap, trends are included only in their most appropriate category.

Economic Trends

The ability of the Pacific Northwest Region to meet the need and demand of recreation users in the 21st century must be reexamined in light of the effects of (1) budgetary constraints; (2) changes in employment situation and employment patterns; (3) dramatic changes in life-style.

Toward that end, broadening the knowledge base of recreation education programs to incorporate commercial recreation and tourism will have an effect on recreation programs and the delivery of recreation services.

Increasing concern about government subsidies coupled with reduced operating budgets is causing many recreation providers to consider assessing new fees for activities and events that previously were available for free, or to increase existing fees to better reflect true costs. The Clinton Administration policy is to encourage cost-based user fees for most federal services.

Effect on Recreation

State, county, and private landowners may not be in a position to contribute to meeting additional demand, even though it is recognized to be their role. This could put increasing pressure on National Forest lands to provide for more recreation.

The additional demand, coupled with lack of facility expansion and reduced budgets, may force the Forest and other recreation providers to charge more fees for facilities and services

and to increase existing fees to cover expenses. In addition, public/private partnerships such as concessionaire development and operation of recreation facilities on public lands will increase.

With a reduced budget, a reduced Forest work force will mean there will be fewer employees involved in the decision making process, thereby allowing decisions to be made more quickly and efficiently when responding to recreation issues. However, this will in all likelihood be offset by budgetary constraints that will limit management options, and political considerations that may increase public involvement needs.

Charging fees for recreation is not new. However, as budgets shrink more and more recreation providers will probably seek ways to continue to meet demand, and recreationists could be paying more direct costs. For example, recent legislation allows Mount St. Helens National Volcanic Monument to collect receipts from an entry fee that can be reinvested rather than returned to the Treasury. In a recent article, Randal O'Toole, forest economist, author, and outspoken critic of National Forest Management, presents an argument for recreation fees. His premise is that recreation fees would level the playing field and provide powerful incentives for forest managers to protect the National Forests. He claims that since most recreation would be low cost, low income people would not be denied access (O'Toole, 1993).

In the future, we can expect to see more and higher user fees charged, particularly for

recreation services and facilities, as the Forest Service relies more on partners in the private sector to develop and operate National Forest recreation facilities. User fees for state and county recreation will also increase, since less public money will be available. As private sector development and operation of recreation facilities on public lands increases, prices will become market driven.

Environmental Trends

Changing public attitudes and values about how federal forest lands should be managed are being recognized. Surveys conducted in 1991 and 1992 indicate that a majority of the public, nationally and in the Forest influence area, believes that greater protection should be given to fish and wildlife habitats, that greater efforts should be made to protect the remaining old-growth forests, that more Wild and Scenic Rivers should be designated, and that clear-cutting should be banned (Steel, List, & Shindler, 1993). In addition, wildlife and fishery conservation issues continue to drive Forest planning and management.

Consequently, national concern for the environment and conservation is affecting Agency goals. An ecosystem approach to National Forest management is being promoted as a means of reorienting the Agency toward a broader definition of forest resource values. Chief Dale Robertson announced the Agency's commitment to ecosystem management as a part of the 1993 mission statement for the Forest Service.

Our knowledge of ecological systems as a basis for preserving resource values is expanding rapidly. *Forest Landscape Analysis and Design* (USDA Forest, 1992) provides an example of how social values, such as outdoor recreation, can be integrated into a broad based ecosystem management approach to land use planning. Additionally, there is increasing recognition of new Forest roles, such as advocating global conservation and promoting an environmental ethic. Predicted global climate changes in the near future may

affect recreation use by affecting the site, thus becoming an important component of outdoor recreation demand (Ewert, 1991).

Effect on Recreation

Outdoor recreation settings and activities can provide personally meaningful and relevant examples of the impact of global climate change. For many individuals, outdoor recreation is the only means by which they experience the natural environment. As global climate changes accelerate, so will the need to expand educational opportunities to enhance ecologically sound use of natural resources through the use of outdoor recreation experiences (Ewert, 1991).

By understanding the ecological relationships inherent in the natural environment and the human uses of that environment, it will be possible to manage recreation settings and use in ways that are compatible and sustainable. More emphasis on biological diversity and reduction in lands available for timber harvest may effect the amount of some recreation settings. There is the potential for a shift toward the more semiprimitive settings. Changes in the amount of timber harvested and the way it is done will result in the Roaded Modified ROS setting being greatly

diminished, while the Roaded Natural and Semiprimitive settings expand. This would result in additional natural settings, a closer correlation between the settings used and settings preferred, and thus higher levels of visitor satisfaction.

With the emphasis on ecosystem management by the Agency and anticipated shifts in budget emphasis, administrative and planning focus will require closer cooperation and coordination between recreation and natural resource planning and management--especially as regards fish and wildlife. Recreation managers will recognize the need to increase partnerships with local wildlife and fishery groups, in an effort to support and encourage programs that will provide opportunities for cooperative funding and projects that will benefit Forest visitors while conserving natural resources.

Political Trends

New concepts are being developed for understanding user and recreation demand. There is increasing recognition of the benefits of recreation: personal, social, economic, and environmental (Lewis and Kaiser, 1991).

Society is seeking opportunities to deal with problem populations, with continued emphasis on anti-drug education, juvenile delinquency, gangs, single parent families, and so forth. In addition, target populations could also include disadvantaged, at-risk youth, and low income families (Mobley, 1992). Research on the benefits of leisure could provide the linkage for more effective programs to reach target populations.

The relationship between Forest users and managers is changing as more value is placed on freedom and participation (Mealy, 1990). There is increased recognition by Forest managers that present decision-making systems are inadequate for integrating social values, and that to implement management practices requires public acceptance and support. Because of this attitude, new ways are being explored to understand visitor needs and involve the public in the decision-making process.

Effect on Recreation

Political trends can affect recreation at several levels. For example, national trends can result in new laws or policies to meet public needs, and the effects will be felt locally.

In the 1990s as national demand for Forest resources increases relative to supply, conflict among competing interests could also increase. All interests will probably seek greater influence on decisions more than any other time in Forest Service history. Most planning processes have focused on use-oriented visitors, whose main interest is activity related and whose activity interests were often strongly represented by user groups. Findings often resulted in differential displacement of attachment-oriented users, whose main reason for visiting an area was the result of an emotional attachment to the area itself. The increased use of a transactive style of planning or constituency-based management and design is necessary in order to incorporate and preserve the interests of attachment-oriented visitor interests and preferences in public land management (Mitchell, 1989). To that end, special emphasis may be needed to accommodate the needs of Native Americans, whose uses of the Forest are particularly attachment-oriented.

Adaptive leadership responses, such as sharing of policy formulation and decision making with constituents, will necessarily increase. Future power sharing will emphasize involvement and not just input. A recent example is the transactive planning process involving the Gifford Pinchot National Forest Trails Task Force, which brought competing trail interest groups together to help resolve conflicts and develop an integrated trail use plan.

Participative leadership at all levels of the organization will increase the strength of the relationship between top management and those who provide direct services. Consequently, trust and efficiency could increase.

The role recreation benefits play in individual lives, communities, and environments are becoming recognized by politicians, land managers, and other individuals who allocate resources and make decisions about how lands will be used. Documents such as *The Benefits of Parks and Recreation - A Catalogue* (Canada, 1992), by the Canadian Parks and Recreation Association, provide useful tools for parks and recreation service providers to help promote, design, and reposition parks and recreation as essential services.

Sociological Trends

Many significant social and demographic changes will influence recreation demand. These changes will affect the future use of recreation areas by populations which historically have not had a significant voice in decisions. As society becomes more complex, demand for greater diversity of outdoor recreation opportunities is expected to increase.

With the recognition of changing socio-demographics, there is an increasingly more dominant role for Hispanics, African-Americans, Asians, and older Americans. Nationwide, everyone will soon belong to a minority group, as caucasions cease to be a majority (NPS, 1992). By the year 2005, Hispanics could replace African-Americans as the nation's second largest population group and its largest minority group.

Women are also becoming more socially and politically dominant, with an increase in female head of households and the growing influence of women in the work force (Mobley, 1992). In 1986 one quarter of American families were headed by a single parent, while 19 percent of households with minor children were headed by a woman with no husband (Szwak, 1988). By 2000, full-time homemakers will in all likelihood be scarce, with more than 80 percent of adult women in the work force. Most of the remaining women will probably only be temporarily unemployed (NPS, 1992).

Consequently, the family is being redefined. Nontraditional family arrangements will probably gain legal recognition and social acceptance as families (NPS, 1992).

To add to the demographic puzzle, aging elderly populations could create difficult moral decisions as science extends life span, with the subsequent debate concerning the quality of life.

There will be a shift of baby boomers from middle age to senior adult population. With the senior population growing at a rapid rate, it will soon grow to one of the largest population groups regionally and nationally (Mobley, 1992). This group will probably be more active and participatory in the decisions affecting their use of leisure time, and will continue to demand opportunities appropriate for their age. They tend to be more safety conscious and aesthetically oriented. Therefore, participation and satisfaction will be more dependent on the quality of maintenance of recreation facilities and settings.

For many, retirement is occurring at an earlier age than in the past. Thus, there will be a need to provide quality recreation opportunities to help replace the purpose, meaning, and time commitment of abandoned careers (Washington IAC, 1990).

This means that well-off-older-folks, (WOOF's), will probably be the target of travel and tourism marketing (Seihl, 1990). For this reason, increased recreation opportunities for the senior citizen population are anticipated. Activities such as trail-related use, passive recreation, and nature appreciation will probably increase in popularity.

Increasingly, leisure activities and recreational behaviors are becoming the most important factors in determining marital success and family solidarity. Coparticipation in leisure experiences is quickly becoming the catalyst for factors that tend to be associated with continuity in family relationships (Mobley, 1992).

Therefore, demand is on the increase for quality recreation facilities with more comfort amenities, such as electrical hookups and modern toilets that are clean and well maintained. Users will most likely also expect to see a variety of information available on site.

The awareness and consciousness of a holistic sense of wellness is predicted to continually increase. The challenge will be to provide facilities and programs that enhance these benefits, which include health and fitness.

Publicly provided life enrichment services are predicted to have more influence on the quality of life. Understanding and illustrating the vital importance of celebrations, rites of passage, rituals, mythology, and sacred places in our society, and the role of public recreation agencies in providing programs, services, resources and facilities toward these experiences is becoming a requirement (Mobley, 1992).

There is increased recognition that opportunities for meditative and spiritual experiences as a part of outdoor recreation activities may depend largely on the natural attributes of the environment (McDonald, 1988). The rise of ecotheology supports this

observation. Rejuvenation and diversion from an urban environment will probably continue to be the primary reasons for outdoor recreation participation (Ewert, 1991).

Growth of the metropolitan areas surrounding the Forest will reduce the opportunities for outdoor recreation and open space that are currently available in adjacent agricultural and forested zones. Evidence of this trend can already be seen in the spreading growth of the Portland/Vancouver metropolitan area. County and community planners are desperately trying to preserve the remnant open space.

Urban culture is on the increase (Chavez, 1990). There has been a noticeable increase in the immigration of Californians and others to the Pacific Northwest, seeking quality of life changes. Many of these people are reared in urban areas, and they bring with them their perceptions of a role of recreation that may differ from the existing opportunities.

Multi-day trips to the Mount St. Helens National Volcanic Monument will probably increase as more opportunities become available, such as the addition of the Coldwater Johnston facilities in 1993-1995. This will bring about an increased need for more overnight facilities both on and adjacent to the Forest.

Additionally, natural resource areas are predicted to become more popular to individuals with disabilities, who will probably expect to participate fully in the entire available range of recreation opportunities (Seihl, 1990).

People remain attached to the automobile as transportation to their recreation destination. They travel to where they want to live and, therefore, choose to live closer to the recreation amenities they desire. As a result, demand for second homes in wildland areas is expected to increase (Chavez, 1990).

All of these factors contribute to the population projection for the primary service area, which is expected to increase dramatically over the next two decades. This follows a population shift to the western and southern parts of the country. By the year 2000, 60 percent of the U.S. population is predicted to live in the West or South (NPS, 1992). The age group of 5-17 years, or school age, is expected to increase 25 percent between 1990 and 2000 (Washington 1992). The current peak weekend and peak summer recreation use may be more spread out as schools adopt year-round classes in order to more efficiently utilize existing classroom facilities to meet the needs of the increasing number of students.

Leisure time is also becoming more rare. Lou Harris and Associates (1988) indicated that leisure time had dropped 37 percent since 1973. This real or perceived lack of time has resulted from growing demands of work, family, and personal achievement coupled with an increasing range of options of how to spend time (Szwak, 1988). Other contributing factors include the increasing number of women in the work force, more people working multiple jobs, and the change from an industrial to a service economy, where more hours must be worked (Seihl, 1990).

Effect on Recreation

As this list of social trends suggests, the makeup and needs of our society are rapidly changing. Two key national trends are predicted to primarily affect the use of the Forest: the geographical shift of people to the South and West and the aging of the population.

Additionally, the aging population and increasing attention to the needs of individuals with disabilities will require an increased need to provide equitable resource-based recreation opportunities for these individuals. The goal should be to provide opportunities free from attitudinal, informational, and physical barriers to participation for those individuals who are able to participate and who wish to do so (Hartman and Walker, 1988). Outfitters are predicted to be increasingly used by the aging baby-boom generation (Chavez, 1990), and the need for more on-site amenities will probably increase.

There are several factors that could reduce the rate of growth of recreation participation, such as lack of time and lack of disposable income. However, the increasing concern for personal health, fitness, and well-being is a value of recreation shared by most age groups that should substantially offset these factors. In addition, earlier retirement and more participation by the elderly will help maintain the rate of growth.

As a response to the perceived lack of leisure time, increasing activity of all types may extend into the hours of darkness (Seihl, 1990). Opportunities in the nighttime are described by Murray Melbin in *Night as Frontier*, 1987.

Special places in the Forest, such as Siouxon and Dark Divide, could be recognized as important for their spiritual values associated with the natural attributes and as places where experiences are dependent not on the activity opportunity but on the specific area. According to Mitchell (1989), attachment-oriented visitors have an emotional feeling about the area itself. A recent landmark social assessment study (Steel, et al., 1993), which focused on the Siouxon valley, showed a strong preference by Portland residents and Siouxon valley visitors for maintaining the current roadless character of the valley for emphasizing outdoor recreation. Both survey research and qualitative interviews indicated significant emotional attachments to the Siouxon valley as it exists today.

Increased cultural pluralism will most likely require a higher level of sophistication and sensitivity by management toward visitor control and satisfaction (Hodgson, Pfister and Simcox, 1990). Changes can be expected in group size, composition, and reasons for participation as use by persons of Hispanic, African-American, and Asian backgrounds increases. For example, larger primary groups of extended family members from Hispanic and Asian backgrounds can be expected (Heywood, 1990). Increased racism may require recreation managers to function as conflict managers, and more law enforcement may be needed (Chavez, 1990).

Economically disadvantaged people, including the homeless from cities, may migrate to wildland areas (Chavez, 1990), creating conflicts with recreation users and straining recreation facilities that may be nearing capacity.

As a result of urban sprawl, the shortage of available adjacent recreation and open space opportunities may drive more metropolitan residents to seek outdoor recreation opportunities available on nearby National Forest lands.

Also, changes in group use may occur as a result of collectives formed by commercial guide enterprises and by group process organizations, whose goal is to promote group interaction (Heywood, 1990). These groups could include combinations of strangers who pursue an activity and then disband, never to form again. They will tend to be larger sized groups with diverse memberships of less experienced users.

Technological and Scientific Trends

In the future, transportation is predicted to become faster, easier and more comfortable (Shafer and Moeller, 1988). Other technological advances could offer a better quality of life for everyone, especially for the physically and mentally challenged (Chavez, 1990). Also, major medical advances could allow people to live longer, healthier lives (Shafer and Moeller, 1988).

Several kinds of common outdoor recreation activities were unknown or relatively unimportant a generation ago. Over the next few decades, however, there may well arise new forms of outdoor recreation, perceived only by specialists, that may lead to vastly more or different outdoor recreation (Clawson, 1985).

The advance of information technology has become a primary driving force for change (Mealey, 1990). Visitors will probably expect more sophisticated information about the Forest. Managers and planners will expect more and better data on which to base recreation management and planning decisions.

Effect on Recreation

Efforts to gather information on recreation planning and management have expanded at the regional and local level. There will probably be a recognized need to build a commitment to develop a comprehensive information base

about use, with spatial and temporal factors included, that will be useful for managers and planners (O'Leary, 1988).

Because increased public and work force information and knowledge are predicted to cause increased interest and participation in recreation policy issues, collaborative problem-solving will become more common as informal information flows freely throughout organizational networks.

The resulting information available to the Forest recreation user should help increase the satisfaction level by providing a closer link between user expectations and the recreation experience. Demand for timely information to aid in trip planning should increase. This will require new and creative approaches to gathering and disseminating up-to-date information, such as the use of data recorders by field personnel and use of computer bulletin boards by users for current information on the facility conditions. The Trail Resource Information System (TRIS), in use since the mid-80's in Forest Service Region 6, is already considered technologically obsolete. Users are becoming accustomed to on-screen and touch-screen icon menus unavailable with

TRIS. Commercially available software for planning hikes, such as *Best Foot Forward* by Grizzlyware, is becoming more available to Forest users. In response to the need for expanded and more easily accessible recreation information, the Forest Service is reevaluating its information needs, while recognizing the opportunity for continuing partnerships with the private sector.

Future trip planning and reservation services for Forest recreation sites may be available via home computer from anywhere in the country, using interactive, user-friendly programs. Artificial intelligence could provide the means to match user-defined needs with available Forest recreation opportunities.

Driven by technology, more and different uses could result in a greater diversification among visitors and a broader array of demands and expectations for specific non-traditional opportunities. Some examples include new clothing, artificial gills, lighter than air craft, night vision goggles, jet skiing, personal watercraft, plastic canoes, mountain bicycles, and so forth. Consequently, new and different facility needs as well as resource impacts may result from new uses.

FINDINGS

This section summarizes and interprets the findings of this study. It discusses implications for recreation management and planning related specifically to programs and projects. The following discussion is divided into four main sections: recreation demand, current and anticipated needs, marketing relationships, and additional studies needed.

RECREATION DEMAND

The increasing population of the market area, coupled with the increase in activity demand previously described, are predicted to bring ever increasing numbers of visitors to the Forest. Overall average recreation demand can be expected to increase from 18 to 22 percent based on projected population increases for Oregon and Washington. Specific activity increases will vary, with some increasing at a greater than average rate, and some less than average. Based on national demographic trends, there will be substantial increases in the number of middle aged and older users, including many who are predicted to have advanced educations and higher, disposable incomes (Luloff, 1990). Washington State population age group changes will most likely reflect this national trend. Population forecasts, modified to reflect local trends, will in all likelihood accelerate growth in Forest visitation well beyond the forecasted statewide average of 18 percent from 1990 to 2000.

Therefore, forest demand for most recreational opportunities will increase significantly over the next decade. As a result, there will be

increasing strains on our current recreation system, especially for the faster growing activities. More recreationists will, in all likelihood, be pursuing a greater variety of activities while using the same resource base. This may lead to increasing user conflict, resource degradation, and changing recreational experiences if appropriate actions are not taken. Forest managers and planners should look at optimizing current resources and providing new resources to meet future demand. Permits, quotas, and reservation systems could become the norm rather than the exception. Law enforcement and regulations will probably have to increase (Ewert, 1991).

High on the priority list for today's recreationists are quality opportunities that can be accessed quickly and conveniently. Also, affordable opportunities suitable for family use will probably be in greater demand (Ewert, 1991). Because the 3-week vacation has been replaced with more frequent but shorter mini-vacations (Washington IAC, 1990), more recreation opportunities for special populations, such as single persons, single

persons with children, urban youth, and the disabled will be required. Recreation areas which are close to population concentrations such as Portland/Vancouver, and that are safe, nondiscriminatory, and suitable for a variety of cultures and uses, will probably be in high demand. Single-use areas and facilities could diminish in value (Ewert, 1991).

Increasingly, in order to be responsive to the needs of a more culturally and ethnically diverse society, different communication patterns and styles will be needed (Ewert, 1991). For example, the international visitation related to Mount St. Helens, and the increasing number of Hispanic and Asian visitors to the Forest, requires increasing consideration in the recreation planning process.

Recreation use will require periodic monitoring to determine if demand projections have been on target. Because of the dynamic nature of demand, recreation managers should continue an ongoing monitoring of recreation trends and be alert to potential changes that may require different management responses.

CURRENT AND ANTICIPATED NEEDS

Now that there is data that provides a better understanding of visitor needs and some predictions about future use, how much and what type of recreation opportunities should be provided for the future? The answer to this question requires additional analysis to determine per capita demand based on projections from current use, estimation of the adequacy of existing facilities, and determining setting capability. As indicated previously, it is also possible to anticipate the future needs and use patterns of Forest visitors by exploring trends.

There are already clear indicators of needs that are surfacing. For instance, visiting interpretive centers, photography, picnicking, and day hiking are predicted to be among the fastest growing forest-related outdoor recreation activities in Washington (Washington IAC, 1990). Facilities catering to these uses will probably be a high priority in the future.

Certain unmet needs have existed for some time but were not considered appropriate for National Forest sites. However, recent policy changes have made their consideration possible. Additional services such as showers, water, waste disposal, and electric hookups should be considered where feasible and appropriate. In a survey of campground users at Wind River, over 45 percent wanted showers provided, while from 10 to 20 percent requested electricity and water hookups. Fifty-one percent of the respondents indicated they would be willing to pay more if additional

facilities were provided. (Bruin, 1990).

For campers in the CRGNSA, the most desired attributes were safe drinking water, clean sites, and a quiet setting. The least important attributes were playgrounds, group shelters, and equipment rentals. (USDA CUSTOMER, 1992).

However, caution should be noted. First, in order to provide a diversity of campground experiences and prevent recreation succession, some campgrounds should continue to be managed to provide a more rustic camping experience.

Second, any decisions to make changes in campgrounds should consider the repeat users. For instance, changes which would substantially increase use could potentially displace the long-time users seeking seclusion. (Schreyer, 1984).

In the study of the Wind River campgrounds (Bruin, 1990), it was noted that hiking and nature trails were found to be the second and third activities that campers participated in. Loop trails of varying lengths from campgrounds provided the best opportunity without requiring driving to another trailhead. In many cases, there are points of interest and special areas that can be accessed by such trails.

When dispersed users in the CRGNSA were asked about what they would like to see most, they indicated a desire for more trails or better maintenance of existing trails. (USDA CUSTOMER, 1992)

Based on information from the Forest Plan, the overall supply of developed camping appears to meet demand except during peak summer weekends. However, some portions of the Forest are not well served by campgrounds. For instance, additional camping, which could be located on private land, is needed on the north end of the Forest to accommodate Monument visitors. (Gardner, 1993). A Forest-wide developed campground survey and management plan could also provide significant savings while maximizing the use of existing facilities.

Figure 22 indicates a moderate level of increased demand for snow play. Discussions with Forest field managers indicate the need to develop snow play areas that are conveniently located for day trips from the Portland/Vancouver area (Gardner, 1993). Snow play is currently occurring adjacent to snowparks, causing use and parking conflicts with users. Conditions can also be hazardous, particularly for children. Safe parking and facilities would complement the winter sports program in the Forest and reduce user conflicts. Highest demand appears to be in the vicinity of Ape Cave and Wind River.

Scenic routes throughout the Forest should be managed as scenic drives. Driving for pleasure and sight-seeing are shown to be popular activities in the Forest (See Figure 19). In addition, Figure 22 shows increased demand for this activity over the next decade. There is inadequate public information about specific routes or points of interest available. Therefore, scenic driving routes should be identified as special transportation routes and management plans should be developed to enhance their scenic and recreational attributes.

The Forest is currently working on a management plan for US Highway 12 called White Pass Scenic Byway, a nationally designated Scenic Byway that could be used as a model for other scenic drives throughout the Forest. Visitor information should provide driving times, distances, and points of interest in several communication styles and languages, to accommodate the culturally diverse visitor needs.

Designated shooting areas would provide safe locations for target practice and sight adjustments. The popularity of the Forest for hunting and shooting has increased, without development of any facilities. Currently, target shooters use gravel pits and other semi-enclosed areas, while leaving trash and shell casings. Providing specified areas would enhance safety and allow for better litter control. Additionally, private sector participation or other partnerships could minimize Forest costs for development, operation, and maintenance.

Recreation settings are subject to change, based on increased use. In other words, when activities are projected to increase, the relationship between the user and the setting can be affected negatively. When this occurs, there are several management alternatives that can be employed, such as increasing the opportunities or limiting the numbers of people. This becomes acute where the land base does not permit assigning additional areas to increase the opportunities, such as in Wilderness.

Opportunities to recreate in semiprimitive settings appear to be the most limited, based

on the desire of many to utilize these types of areas for their activities. In some cases, it appears that the perception of a semiprimitive setting is all that is required for users. For instance, the hiker may be getting a near semiprimitive experience even though the area does not meet the size criteria of 2500 acres or greater. This has been shown to be particularly true for some urban dwellers, whose perception of wilderness may be any untouched, wooded natural area. In order to satisfy demand for semiprimitive opportunities, it may be desirable to reevaluate the setting criteria and include a category for those areas that have most of the characteristics of the semiprimitive setting but are not as large (Washington IAC, 1990). In the future, recreation settings perceived as more primitive and natural, located close to where people live, will probably become more valuable for recreation.

From a statewide perspective, each provider has the responsibility to provide specific elements of the outdoor recreation system. This system in its entirety could then provide the diversity needed to insure recreation quality (Washington IAC, 1990). The Forest has unique capability to provide additional semiprimitive recreation opportunities. This will be most important where demand is expected to increase the most, close to where people live.

The Forest, its concessionaires, and other partners should develop an educational program that encourages visitors to minimize resource demands. The awareness and use of green products and services by the public is an indication of concern regarding environmental degradation through overuse

and misuse. The value of reduced resource use should be communicated to the public, and opportunities for their participation should be convenient and widespread (NPS, 1992). Implementation could range from providing recycling bins to providing low-water toilets and recycled paper products.

Along with improved education comes the need for integrated interpretation programs that will add to the enjoyment and quality of the visitor experience.

MARKETING RELATIONSHIPS

The Forest Service has only recently begun to apply service marketing concepts to outdoor recreation as a means of shaping supply and demand, so that a better balance is obtained. The National Park Service, the other major provider of public outdoor recreation in the United States, is effectively using marketing techniques in its relationship with its customers and the public, resulting in a more favorable position with Congress, Office of Management and Budget, and most public groups (Syme, 1987). Management from a marketing perspective requires recreation managers to recognize the socioeconomic and value differences in today's society. There is a need to shift the emphasis from a product orientation that fits the customer to the product, to one which recognizes the diverse needs and preferences of visitors or customers and fits the product or service to the customer (USDA, 1992). Other segments of the public can be included as non-user customers.

Demand for recreation services can be altered to more closely match capacity by using marketing techniques such as differential pricing, promotion, modification of services, and reservation systems. Altering demand through marketing techniques can provide better distribution of use and maximize existing opportunities. For example, popular campgrounds could be promoted during periods of low use, and/or fees could be reduced. Sites that are not as popular, but offer similar experiences, could be promoted during peak use periods.

Also, marketing efforts should be aimed at developing and promoting an outdoor recreation ethic. Increased demand may be accompanied by more overuse and misuse of Forest resources. Careless or insensitive individuals can cause degradation of resources and resulting experiences. Therefore, public awareness of responsible use can motivate people to reduce their recreational impact and help in restoration efforts.

Target marketing establishes market segments with homogeneous characteristics as a basis for matching opportunities with the capabilities and goals of the organization (Syme, 1987). Information about current and potential users is an important factor in the selection of target markets. Thus, local studies such as Steel, Brunson and Kruger's (1992) Pacific Northwest survey, and Bruin's (1989) study of camping in the Wind River Valley, provide important information that can be useful in determining target markets and market segments for the Forest.

Public and private recreation providers are recognizing the need to have better coordination in providing a system of federal, state, county, and local recreation opportunities.

There are now more firmly established links between the Forests, other public recreation agencies, educational institutions, cultural arts organizations, and other life enrichment agencies. These include shared

responsibilities, joint facility use, leisure and recreational education, and a multidisciplinary approach to service delivery and resource leveraging (Mobley, 1992).

Increased working links between recreation educators, market researchers, and recreation practitioners provide benefits to the recreation user. Thus, the public can expect improved professionalism of recreation services, with more attention to certification and the interdependency of professional practice and formal preparation, providing the expertise needed for successful marketing (Mobley, 1992). Also, local and regional research on benefit demand and recreation marketing could increase.

There is currently very little information about minority users of the Forest and their activity and setting preferences. Therefore, in order to accurately provide for minority user preferences for the future, more specific studies need to be conducted.

Should there be limitations on user fees as a means of generating revenue to support recreation? Such limitations, combined with the lack of adequate budgets, will reduce the capability to expand existing programs and develop new programs to meet changing demand on National Forests (Syme, 1987). However, by developing a marketing plan that includes 21st century market-driven customer satisfaction strategies and by focusing on the changing needs of the user or customer rather than the product, Forest managers may be able to provide for those needs more effectively.

ADDITIONAL STUDIES NEEDED

Throughout this study, it has become clear that there is much work to be done, to be able to understand and anticipate outdoor recreation user needs. These are areas of potential study, listed in no special order:

1. A *CUSTOMER* or similar type of survey conducted after 1995 would provide Forest managers and planners with valuable data about user characteristics and preferences specific to the Forest. There are several major developments that could induce demand and perhaps provide a catalyst for reevaluating demand. These include the developments associated with Mount St. Helens National Volcanic Monument and the Columbia River Gorge National Scenic Area. The Mount St. Helens project development on the west side, known as the Coldwater/Johnston Complex, is expected to dramatically increase the use of this section of the Forest. On the south end of the Forest, the Scenic Area is embarking on an ambitious recreation capital investment program that could provide substantial increases in day use and overnight capacity. An increasing number of people are also expected to discover other recreation opportunities throughout the Forest. Once these facilities are opened and operating (scheduled opening is for May 1995), it would be opportune to assess the changes to overall recreation use, both for Mount St. Helens and traditional uses.
2. As the pressure to provide additional opportunities increases, the Forest's ability to accommodate diverse needs could be reduced. As a result, minimizing user conflicts and resource impacts will require additional study. The ability to meet recreation needs at different levels will likely be determined in the future through the Forest Planning process, where recreation use conflicts will continue to drive management issues. In addition, conflicts with other resources such as timber and wildlife habitat, will need resolution within the context of the Forest's role in local, regional, and global ecosystems.
3. Changes in the recreation settings and user patterns of behavior due to global climate changes should be monitored on a regional basis. Strategies should be explored for managing the anticipated changes in recreation demand that may result from these setting changes.
4. As managers understand the usefulness of benefits based management, it will be necessary to have more and better information regarding how benefits are perceived and desired by Forest users. Understanding benefits will give managers valuable clues to understanding what motivates users to visit the Forest.

5. Facility preference surveys should be conducted to determine what types of camping, picnicking, and other types of facilities should be provided in order to meet user needs. Some of the concerns include: types of camping, road surfaces, water, electricity, showers, dump stations, and information.
6. Studies of user preferences for some activities may be useful in determining qualitative differences in desired experiences. For instance, more and more anglers are seeking a catch-and-release experience. By understanding demand for this and other types of fishing, it may be possible to manage the fishery resource to meet a broader variety of needs (Lanigan, 1993).
7. Those areas which are currently unroaded or are perceived as natural settings should be identified and considered for their unique recreation opportunity potential and preference by users. As user and other resource demands compete for specific segments of the Recreation Opportunity Spectrum (ROS), the critical need will be for additional semiprimitive opportunity settings. The Washington SCORP report recommends identifying and preserving those settings that are perceived as more primitive, natural, and close to where people live. Currently the National Forest lands provide the best, if not only, opportunities for meeting such demand in the future.
8. The Oregon SCORP reports that the predominant preference is for semiprimitive settings. However, the larger use actually occurs in the roaded natural settings. This disparity raises several questions that provide basis for further study. Is there a shortage of such settings close to the population centers? Should the ROS system be revised to accommodate those areas that provide the perception of a semiprimitive setting, even though they may not meet the size criteria? The OR SCORP report recognizes that the development of ROS systems to classify such smaller areas is needed (Oregon, 1991).
9. Recreational demand information for Washington did not take into account the use generated from outside the state. Specifically, more and more Oregonians, Californians, and Canadians are visiting the Forest. Future demand studies should take this into account.
10. Additional study should be done relative to the effects of maintenance on demand. For instance, in many cases the priority for trail maintenance goes to those trails receiving heavy use. The trails that receive the most use just happen to be those that are well maintained on a continuing basis.
11. Setting preferences, both for types of settings and specific locations, should be determined for subgroups within the broader activity groups. Additional locational information related to specific activities and user setting preferences will be needed to help Forest managers make informed land use decisions. Social assessments will be valuable in determining locational preferences for those visitors whose main reason for visiting an area is their emotional attachment to the area itself.

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APPENDICES

APPENDIX A

Recreation Setting by Activity for Washington Region 2

ROS Setting Last Used and Preferred, by Activity Category

		Primitive	Semi-Primitive	Roaded Modified	Roaded Natural	Urban	Total ¹
Fishing	Last Used	5%	14%	24%	39%	18%	100%
	Preferred	16%	26%	23%	29%	6%	100%
Water Activities	Last Used	1%	5%	16%	36%	41%	99%
	Preferred	4%	16%	22%	36%	21%	99%
Nature Study, Food Gathering	Last Used	6%	15%	24%	31%	23%	99%
	Preferred	18%	28%	22%	24%	7%	99%
Hiking, Walking, Climbing	Last Used	7%	18%	18%	19%	38%	100%
	Preferred	21%	32%	17%	22%	9%	101%
Camping	Last Used	5%	17%	35%	36%	6%	99%
	Preferred	14%	26%	27%	29%	4%	100%
Snow Activities	Last Used	4%	8%	19%	23%	46%	100%
	Preferred	7%	14%	19%	29%	32%	101%
Motorized ORV Riding/Driving	Last Used	2%	14%	42%	27%	15%	100%
	Preferred	5%	20%	42%	27%	7%	101%
Non-Motorized Riding	Last Used	3%	9%	16%	19%	53%	100%
	Preferred	6%	14%	19%	38%	24%	101%
Sightseeing, Picnicking	Last Used	1%	5%	19%	45%	30%	100%
	Preferred	4%	11%	27%	47%	12%	101%
Hunting, Shooting	Last Used	20%	21%	38%	14%	8%	101%
	Preferred	43%	27%	21%	6%	4%	101%
Sports, Games	Last Used	1%	1%	4%	7%	88%	101%
	Preferred	2%	2%	4%	11%	82%	101%

¹ Total sometimes unequal to 100% due to rounding

APPENDIX B

ROS Setting Characterization*					
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Area is characterized by essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.	Area is characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Motorized use is not permitted.	Area is characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Motorized use is permitted.	Area is characterized by predominantly natural-appearing environments with moderate evidences of the sights and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.	Area is characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available.	Area is characterized by a substantially urbanized environment, although the background may have natural-appearing elements. Renewable resource modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans, on-site, are predominant. Large numbers of users can be expected, both on-site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site.

*This table is for descriptive purposes only.
Use the five specific ROS class delineation criteria given in Table 2 to identify the actual areas to which these descriptions apply.

ROS Experience Characterization*					
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Extremely high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility and self-reliance through the application of woodsman and outdoor skills in an environment that offers a high degree of challenge and risk.	High, but not extremely high, probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk.	Moderate probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk. Opportunity to have a high degree of interaction with the natural environment. Opportunity to use motorized equipment while in the area.	About equal probability to experience affiliation with other user groups and for isolation from sights and sounds of humans. Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities associated with more primitive type of recreation are not very important. Practice and testing of outdoor skills might be important. Opportunities for both motorized and non-motorized forms of recreation are possible.	Probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. These factors are generally more important than the setting of the physical environment. Opportunities for wildland challenges, risk-taking, and testing of outdoor skills are generally unimportant except for specific activities like downhill skiing, for which challenge and risk-taking are important elements.	Probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. Experiencing natural environments, having challenges and risks afforded by the natural environment, and the use of outdoor skills are relatively unimportant. Opportunities for competitive and spectator sports and for passive uses of highly human-influenced parks and open spaces are common.

*These experiences are highly probable outcomes of participating in recreation activities in specific recreation settings.

APPENDIX C

RECREATION USE 1991 GPNF

ACTIVITY TYPE	TOTAL OCCASIONS	TOTAL RVD
ATTENDING TALKS & PROGRAMS	1,071,558	42,861
AUTOMOBILE TRAVEL	1,044,604	240,260
BOAT, POWERED	18,018	4,145
CAMPING, GENERAL DAY	158,439	123,584
CAMPING, TENT	213,601	205,062
CAMPING, TRAILER	108,732	104,382
CAMPING, VEHICLE	147,008	207,286
CANOEING	692	201
CROSS-COUNTRY SKIING, SNOWSHOEING	58,632	22,281
DIVING	22	5
FISHING, ANADROMOUS	13,427	4,432
FISHING, COLD WATER	223,174	71,417
GAMES & PLAY	63,530	8,894
GATHERING FOREST PRODUCTS	192,037	72,973
GENERAL INFORMATION	1,020,746	30,624
HIKING & WALKING	1,258,002	478,043
HORSEBACK RIDING	68,096	25,880
HUNTING, BIG GAME	146,123	94,991
HUNTING, SMALL GAME	1,620	778
HUNTING, UPLAND BIRDS	6,597	2,771
HUNTING, WATERFOWL	115	51
ICE & SNOWCRAFT TRAVEL	39,375	14,175
INDIVIDUAL SPORTS	3,875	543
LISTENING TO AUDIO PROGRAMS	423,700	12,711
MOTORCYCLES & SCOOTERS	16,510	5,120
MOUNTAIN BIKE	9,462	3,600
MOUNTAIN CLIMBING	36,920	19,938
NATURE STUDY (HOBBY, EDUCATION)	129,260	33,610
NON-CONSUMPTIVE WILDLIFE USE	135,850	35,321
ORGANIZATION CAMPING, GENERAL DAY	714	1,279
ORGANIZATION CAMPING, NIGHT	4,387	6,449
OTHER WATERCRAFT	18,835	4,330
PICNICKING	337,994	67,598
RECREATION CABIN USE	12,500	15,750
RESORT & COMMERCIAL PUB. SERV, GEN.	26,643	6,128
SLEDDING, TOBOGGANING, TUBING	560	174
SNOW PLAY	14,716	4,417
SPECIALIZED LANDCRAFT (OHV'S)	175	63
SWIMMING & WATERPLAY	52,265	13,068
TEAM SPORTS	766	78
TOURING BIKE	2,075	476
TOURING, GUIDED	1,345	242
TRAILHEAD/SNOWPARK ACTIVITIES	22,849	2,285
TRAIN & BUS TOURING	300	120
VIEWING ACTIVITIES (SPECTATOR)	4,856	680
VIEWING INTERPRETIVE EXHIBITS	556,732	22,269
VIEWING INTERPRETIVE SIGNS	2,210,309	88,411
VIEWING SCENERY	3,494,541	524,190
VIEWING WORKS OF HUMANKIND	2,145	86
WALKING, GUIDED	58,901	7,069
WALKING, UNGUIDED	725	66
	13,434,058	2,631,167